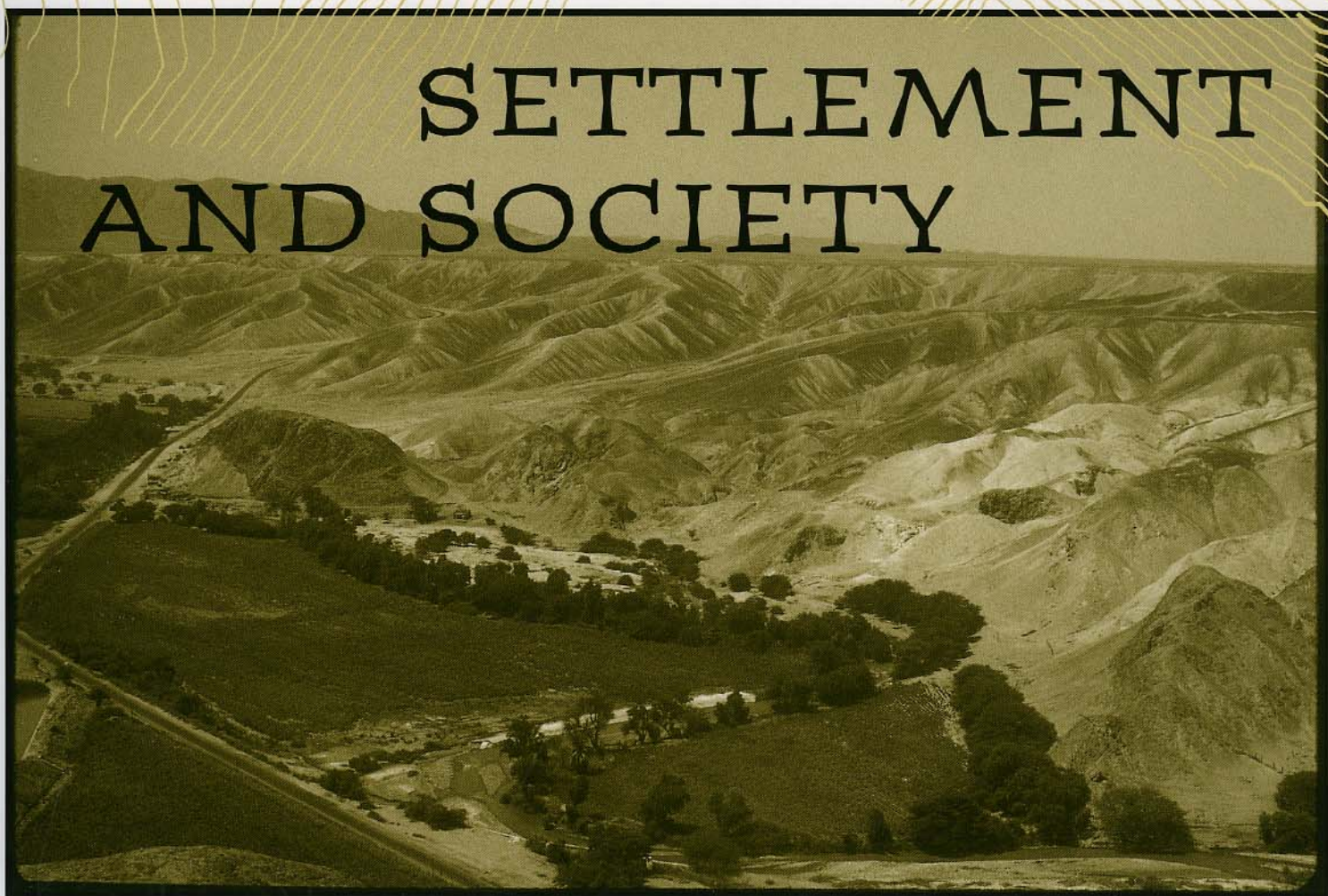


ANCIENT NASCA

SETTLEMENT
AND SOCIETY



HELAINÉ SILVERMAN

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ANCIENT NASCA SETTLEMENT AND SOCIETY

Ancient Nasca

Settlement and Society

Helaine Silverman

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Para CUQUI (Lidia) y toda la familia Velayos.

Gracias por su amistad, cariño, y ayuda.

Un beso, Helaine

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ETHNOGRAPHICALLY KNOWN PUKIOS
AND NASCA HABITATION SITES**

[jpegs]

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Chapter 6. Nasca 2

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**TEXT: SETTLEMENT PATTERNS ASSOCIATED
WITH PUKIOS, BY PHASE**

[Microsoft Word 4.0]

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PREFACE

Nasca is one of the most famous societies of ancient Peru. Its exquisite polychrome slip-painted pottery, enigmatic ground markings, ingenious irrigation system, and human trophy heads have long fascinated archaeologists and the public. For years scholars have tried to explain the conditions that produced the wide areal distribution of an essentially homogeneous Nasca pottery style, but only recently have there been sufficient field data with which to meaningfully address the issue.

In summer 1983 I undertook a brief reconnaissance along sections of the Nazca and Grande Rivers in the Río Grande de Nazca drainage in order to locate Nasca habitation sites for dissertation fieldwork. Few such sites had been reported in the literature, and Nasca was known almost exclusively on the basis of and as an exquisite pottery style. Little was understood or even asked about the people who had made and used this remarkable ceramic ware. As a graduate student I was confronted and confounded by a society whose population had died quite noticeably but lived virtually invisibly. It was this lack of basic information on Nasca's social, economic, and political organization and its ethnocultural definition that prompted my interest in Nasca.

My preliminary fieldwork in summer 1983 led to the formulation of a testable hypothesis for the dissertation. I had observed scores of Nasca cemeteries but few habitation sites. I concluded that previous archaeologists had been correct when they characterized Cahuachi as an early Nasca urban settlement. I hypothesized that Cahuachi had grown at the expense of its rural sustaining hinterland, the way Teotihuacan in Mexico had absorbed its valley population and depopulated the surrounding countryside. As such a city, Cahuachi would be a microcosm of Nasca society, and for that reason I carried out a program of excavations at Cahuachi the next year.

The data from my 1984–85 excavations, however, suggested that Cahuachi was a vacant ceremonial center brought to life by frequent pilgrimage episodes rather than an urban center (Silverman 1988a, 1993a; these conclusions are supported by Giuseppe Orefici's seventeen years of large-scale excavations at the site, which have not discovered evidence of a significant residential/domestic occupation). Into the late 1980s scholars still had little sense of how Nasca society had evolved or what it was like beyond its ceremonial and mortuary dimen-

sions because of the very limited data available on population and society in the Río Grande de Nazca drainage.

Based on his not insubstantial experience in the Río Grande de Nazca drainage, Tello (1959: 60) wrote that “the remains of Nasca culture, properly speaking, are scarce with respect to ancient habitation sites, monumental buildings and huacas or temples, but are very rich, abundant and illustrative in so far as tombs and their contents are concerned.” Referring to the limited amount of arable land in Ica and Nazca, Kroeber (1944: 25) concluded that “however dense the population, it could never have been very great absolutely.” Robinson (1957: 13) stated that “cemeteries were predominant” among the sites he visited during his survey in the Río Grande de Nazca drainage. Strong (1957) recorded no Nasca habitation sites during his south coast reconnaissance other than the “Late Nazca” occupation at Chaviña in Acarí and “house mounds” at Cahuachi (on the latter, see the discussion in Silverman 1993a: chap. 4).

Clearly, identification of Nasca domestic settlements was crucial for improving archaeologists’ understanding of Cahuachi and the society to which it corresponded. In the late 1980s a series of surveys was undertaken on the south coast to resolve the issue of the apparently missing Nasca habitation sites. My project in the Ingenio and middle Grande Valleys, the subject of this book, was one of these. I explicitly sought to address and resolve the problem of the missing Nasca habitation sites that the unexpected results of my dissertation fieldwork had resurrected. Other survey projects that were dedicated to understanding Nasca society included those of David Browne and of Markus Reindel and Johnny Isla in Palpa, Donald Proulx in the lower Nazca Valley, Katharina Schreiber in the southern tributaries, and Patrick Carmichael along the littoral strip between Acarí and Ica. These recent surveys have recorded hundreds of Nasca habitation sites in the Río Grande de Nazca drainage. Scores more are known in the Ica Valley thanks to the fieldwork of Carlos Williams León and Miguel Pazos, Sarah Massey, and Anita Cook. Seek and you shall find.

Research Goals of the Ingenio Valley Survey Project

Survey of the Ingenio Valley was conducted in order to contextualize my previous research at Cahuachi and test the ideas about Nasca society developed as a result of that fieldwork. The specific goals of the Ingenio Valley Survey Project were the following:

1. locate and ascertain the nature and distribution of Nasca habitation sites in one major valley of the Río Grande de Nazca drainage;
2. contextualize Cahuachi in the sociopolitical and economic milieu of its times;
3. find the antecedents of Cahuachi and the earliest Nasca culture that would explain the rise of Cahuachi and early Nasca civilization (see Silverman 1994a);
4. learn about changes (social, political, economic, ideological) in Nasca society following the demise of Cahuachi (see Silverman and Proulx 2002);
5. gather more information on the great geoglyphs of the Pampa so as to contextualize them within Nasca society (see Aveni and Silverman 1991; Silverman 1990a, b; Silverman and Browne 1991);
6. test the Nasca relative ceramic sequence (it had been developed with museum collections) against the reality of Nasca sites in the field;
7. record evidence of interaction between the Nasca heartland—of which the Ingenio Valley is a part—and other valleys of the south coast (see Silverman 1997 based on a subsequent project);
8. recover evidence of coast-highland interaction and contact with particular interest in the Nasca-Wari interface (prompted by the discovery of the Nasca 8/Loro offerings in the Room of the Posts at Cahuachi; see Silverman 1988b, 1993a: chap. 13).

Theoretically, the project was conceived within the context of particular debates and issues current in the late 1980s: complex society in general and in the Andes (e.g., Drennan and Uribe 1987; Patterson and Gailey 1987; Donnan 1985; Haas, Pozorski, and Pozorski 1987) and the degree of sociopolitical complexity of Nasca society in particular (Carmichael 1988; Massey 1986; Silverman 1988a); the nature of inequality in the Andes (e.g., Schaedel 1988); the role of peer-polity interaction in increasing political complexity (e.g., Renfrew and Cherry 1986); the recognition of social boundaries and cultural frontiers in the archaeological record (e.g., Green and Perlman 1985). As I began to analyze and interpret the Nasca data for this book I became interested in other theoretical perspectives. Among these are the study of space, place, landscape, and the built environment (e.g., Cosgrove and Daniels 1988; Moore 1996; Parker Pearson and Richards 1994; Townsend 1992 *inter alia*); the semiotics and manipulation of material culture (e.g., Emerson 1997; Gottdiener 1995; Hodder 1989, 1995; Hodder et al. 1995: pt. 5); the concept of heterarchy as a corrective to positivist expressions of hierarchy (see especially Ehren-

reich, Crumley, and Levy 1995; see Silverman 1993a: fig. 23.11); the paradigm of inequality as a way of avoiding the problem-riddled and fruitless debates about whether or not a particular society was a state (e.g., McGuire and Paynter 1991; Price and Feinman 1995); discussions about the nature and limits of chiefdom society and the evolution and varying manifestations of inequality and power (e.g., Earle 1991, 1997; Earle, ed. 1991; Emerson 1997; Price and Feinman 1995; McGuire and Paynter 1991); the role of ideology (e.g., Demarest and Conrad 1992; Pauketat and Emerson 1999); the archaeology of ethnicity (e.g., Jones 1997; Stark 1998); core-periphery relations (e.g., Champion 1995); agency theory (e.g., Blanton et al. 1996; DeMarrais, Castillo, and Earle 1996); and practice theory (Pauketat 2000).

Overarching the theoretical perspectives noted above and the methodologies that can animate them is my commitment to the practice of a conjoined processual and postprocessual archaeology in situational accordance with the richness of the data and questions being asked. I advocate a holistic rather than dogmatic archaeology. I am as cognitive in my interpretations as the data permit, but the importance of the subsistence economy, quest for primary raw materials, nature and organization of the water supply, and level and density of population cannot be ignored. Furthermore, all interpretation must be underwritten by adequate data. As the title of Preucel's (1991) edited volume indicates, there are multiple ways of knowing the past.

Contrary to oft-leveled accusations of essentialization, many issues that Andeanists—myself included—investigate do engage scholars in other world areas. Among these are state formation; urbanism; long-distance trade and exchange; interethnic relationships; the collapse of civilizations; the relationship between monumental architecture and complex society; environmental factors in the configuring of socio-political-economic relationships; the role of religion and ideology in the growth of large-scale social formations; elite or agency-based strategies of power; practice and the deployment of style, material culture, and spatial behavior in the assertion of identity and the rights thereof; and negotiation and resistance among the different structural segments of a society.

As I professed at the conclusion of *Cahuachi in the Ancient World* (Silverman 1993a), so, too, I manifest here my belief that “Ancient Peru” was a coherent culture area or cotradition within which there were numerous and not always successful variations on that theme. Cross-cultural comparison and generalization are beneficial. But archaeologists who work in the Central Andes are

dealing with Andean societies with long evolutionary trajectories of development, accommodation, and innovation within culturally constrained limits. As Moseley (1994: 34) has said, “It is potentially more constructive to develop native models of organization that are appropriate to the Andean past.” To paraphrase de Certeau and Bourdieu in this regard, the practice of everyday life in the Andes was operationalized by, conducted within, and led to distinctly Andean behaviors that are recoverable in the archaeological record. To greater and lesser degrees, archaeologists can be assisted by ethnohistory and ethnography from the region.

About This Book

In this book I seek to describe, analyze, and interpret Nasca settlement patterns as revealed during my comprehensive survey of the Ingenio Valley and middle Grande Valley in 1988–89, informed by data gathered at Cahuachi in 1984–85 (Silverman 1993a), reconnaissance in the lower Pisco Valley–Paracas Peninsula in 1992, and excavations in the Pisco Valley in 1994 (Silverman 1997). The book is further informed by preliminary published reports from other colleagues' projects for various of the south coast valleys. These investigations amplify the bases upon which ancient Nasca society can be reconstructed. It has been necessary to repeat some information from earlier publications, notably *Cahuachi in the Ancient World*. I also expand upon data and interpretations in *The Nasca* as I deal with the Nasca economy and Nasca sociopolitical organization.

Although I agree with Menzel, Rowe, and Dawson (1964) that the differentiation of Paracas and Nasca is artificial, based on a particular change in pottery technology from pigments applied postfire to the use of pre-fire slip pigments, length constraints prohibit me from taking a temporally deep perspective on ancient Nasca society. A chapter on Paracas and the Paracas Necropolis–Nasca relationship has been omitted from the final manuscript, as was a chapter on the evolution of prehispanic society in the Río Grande de Nazca drainage after the demise of Nasca (including the Nasca-Wari relationship). Briefer treatments of these societies were moved to *The Nasca*, which I wrote with Donald Proulx (2002). Chapters on the important issues of the Nasca cultural identity in terms of Nasca material remains beyond the heartland, the relative and absolute Nasca chronologies, history of Nasca research, Nasca art, Nasca religion, the geoglyphs, and head-hunting were removed from the Iowa manuscript and placed in *The Nasca* in simplified

form. I hope very much that the two books will be used in conjunction so that the essence of the originally intended fuller treatment of Nasca society is achieved. I also eliminated an evaluation of the Nasca occupation of the Ica Valley, as this is known from brief articles, a dissertation, and an INC report. That discussion is forthcoming in a volume called *Andean Archaeology I: Variations in Sociopolitical Organization*, edited by William H. Isbell and Helaine Silverman.

In chapters 1 to 3 of this book I establish the theoretical, geographical, and methodological bases for the presentation of the phase-by-phase settlement pattern data in chapters 5 to 12. I have chosen to present the basic site data in terms of minimum and, I hope, emically meaningful units. In the future, other researchers should find that my format facilitates comparisons because the data do not have to be disaggregated. I have isolated Site 165 in chapter 4, prior to the standardized data presentation, because of the importance I have previously argued for the site (see Silverman 1990b, 1993a: chap. 23). I then move on to consider Nasca settlement in the rest of the Río Grande de Nazca drainage (chapter 13). Chapter 14 offers a brief analysis of the component elements of the Nasca settlement pattern data. I then reconstruct Nasca's economic organization (chapter 15). The book concludes with a discussion of Nasca sociopolitical organization informed by the diachronic interpretation of Nasca settlement patterns and current archaeological theory (chapter 16).

In terms of the presentation of settlement pattern data, it is important to indicate that most of the Nasca sites recorded on survey were multicomponent with pottery of more than one Nasca phase on their surfaces. In this book I describe a site in the chapter corresponding to its earliest Nasca occupation. I do not repeat the description in subsequent chapters for later phases represented on the site surface unless there is reason to do so.

Site Distribution Maps (SDM)

The most important decision about this book that had to be made concerned presentation of the standardized data underwriting the text. After agonizing for many months, my editor, Holly Carver, legitimately decided it was economically impossible to publish *Ancient Nasca Settlement and Society* in the two volumes necessary to accommodate all the graphic material. The present volume is a compromise. It includes those drawings, photographs, site plans, sketch maps, and tables permitted by

length constraints and that are considered absolutely necessary for understanding the paper text. We have mounted on a CD the standardized site distribution maps (referred to as SDM in the text) with their corresponding Excel spreadsheets, as well as the pukio distribution maps with their corresponding texts and several other tables. It is intended that the reader print out his/her own copy of the CD material for use in conjunction with the volume. We believe that this hybrid publication augurs well for the field given the reality of financial constraints on academic publishing.

Cautionary Notes

This book supersedes my reports to the Instituto Nacional de Cultura in Lima, Peru. Those reports were written for the INC before the data analyses were completed. In particular, numbering of various sites has changed during the subsequent analysis. The present book represents my final assessment of the field data. This book and no previous statement should be consulted by anyone seeking information on my opinion of the Nasca occupation of the Ingenio Valley and middle Grande Valley. Stated uncertainties in the present book are the direct result of the ambiguities of the site surfaces. The need for extensive excavations is recognized and advocated. The book represents the state of knowledge about Nasca society through early 2001. New publications and fieldwork by others will surely modify many of the ideas put forth here.

Orthography

Except when quoting others, I continue to use my own convention (see Silverman 1993a: ix) that Nasca written with *s* refers to the archaeological culture dating to the Early Intermediate Period that is characterized by polychrome slip-painted pottery; Nazca written with *z* refers to the geographical area, river, modern town, and all the prehispanic and postconquest societies that existed in the drainage.

The Reporting of Radiocarbon Measurements

Unless otherwise noted, all radiocarbon dates are presented uncorrected and uncalibrated.

Translations

All translations are mine unless otherwise noted.

Other Terminology

We will never know what the bearers of the Nasca art style called themselves. Throughout this book I will refer to them as the Nasca people and the Nasca. I recognize that this is like calling Americans “the Coca-Cola people” or “the Cokes,” but I see no other solution.

I have decided to call Site 165 just Site 165 rather than Ventilla (see Silverman 1990b, 1993a: chap. 23) because the site lacks the strong historical association of place and name that, for instance, Cahuachi has.

Known by many names (e.g., the Pampa de San José, Pampa de Nazca, Pampa de Cinco Cruces, Pampa de Jumana), here I simply refer to “the Pampa.”

Following Shimada (1994), I return to the word Mochica for the archaeological culture of the north coast during the Early Intermediate Period and reserve Moche for the river and valley. The phases of the Mochica pottery sequence remain Moche I–V.

ACKNOWLEDGMENTS

The Ingenio Valley Survey Project was supported by a research grant from the National Geographic Society, to whom I offer sincerest thanks. The project was carried out over nine months between August–December 1988 and April–July 1989. It was conducted under Resolución Suprema 226-88-ED and Resolución Suprema 282-89-ED. I am grateful to the Instituto Nacional de Cultura del Perú for the research permits.

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In Palpa we were kept well fed by the Restaurant Monterrey in 1988 and by Sr. Felix Medina Uribe in 1989. Don

Felix was a delightful host in his home and a source of valuable ethnographic information.

Josué Lancho Rojas and his wife, Sra. Chabuca de Lancho, were always welcoming during our visits to Nazca, my other home on the south coast.

It was a delight to coincide with David Browne in the field in 1989. His fresh vision of Nasca significantly improved my own.

Over the years my investigations of Nasca culture have benefited enormously from critical conversations with and the professional generosity of Donald Proulx, the senior Nasca scholar. His extraordinary collegiality is greatly appreciated and warmly acknowledged.

Joerg Haeberli has been most kind in sharing his data on and interpretations of far south coast archaeology with me.

Jalh Dulanto taught me the basics of Excel, thereby facilitating the analysis of site data. He also helped me check our field measurements of site areas, for which I am very grateful.

I appreciate the insights of these and many more colleagues. All mistakes of interpretation are my own. I am liable for whatever literature I did not read or assimilate.

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Above all I thank Holly Carver, director of the University of Iowa Press, for not giving up on what was originally an immense and unwieldy manuscript and a truly daunting publication challenge. I am immensely grateful to her for devising the acceptable compromises represented by this book.

ANCIENT NASCA SETTLEMENT AND SOCIETY

To Be Human Is to Dwell

SETTLEMENT PATTERNS AND SOCIAL GEOGRAPHIES

In a prescient and theoretically informed article that did not have sufficient impact on the field at the time of its publication, Kus (1983) observed that the recognition of spatial patterning is one of the most immediate tasks of the archaeologist, and, she said, we also must be concerned with the spatial aspects of cultural activity and the social representation of space. I agree. I believe that we must move beyond processual approaches to settlement patterns to deal with the space and place of human settlement in Nasca society. Therefore, it first behooves us to consider how archaeologists have conducted settlement pattern archaeology and how my study can be situated in the field.

Systematic settlement pattern archaeology began through the work of Gordon R. Willey in the Virú Valley on the north coast of Peru. In his seminal monograph on prehistoric settlement patterns, Willey (1953: xviii) advocated the study of human adaptation to the environment over a long period of time and expressed his research goal as the interpretation of “the nonmaterial and organizational aspects of prehistoric societies.” To achieve this goal, Willey (1953: 1) concentrated on settlement patterns (the distribution of archaeological sites by tempo-

ral period), arguing that “of all those aspects of man’s prehistory which are available to the archaeologist, perhaps the most profitable for such an understanding are settlement patterns.”

To ascertain the Virú Valley’s settlement patterns, Willey conducted an extensive ground survey, informed by the then-new application of aerial photography and a relative chronology constructed by means of an independent ceramic sequence (see Ford 1949; Strong and Evans 1952). Taking the Virú Valley as a coherent survey region, Willey located sites in geographical space; classified them on the basis of inferred habitation, defense, community-ceremonial, and mortuary activity; and relative-dated them in order to see their synchronic and diachronic spatial arrangement. Willey analyzed the sites in terms of valleywide survey parameters, geographical-ecological context, functional classification, and an evolutionary perspective on site distribution in time and space. He interpreted settlement pattern changes according to the larger cultural processes identified on the north coast that had been applied to the Central Andes overall (see Bennett and Bird 1964; Kroeber 1948; Steward 1948; Strong 1948; Willey 1948). Julian Steward’s

(especially 1938, 1947, 1955a, b, c) cultural-ecological and evolutionary influence is clearly visible in Willey's work and was overtly and gratefully acknowledged by him (Willey 1953: xviii, xx).

Willey's study has remained the model for and standard against which subsequent settlement pattern work is conducted and assessed (e.g., Billman and Feinman 1999; Parsons 1971; Sanders, Parsons, and Santley 1979; Wilson 1988). Therefore, it is important to critically review Willey's explicit premises on the practice of settlement pattern archaeology. I argue that Willey's important legacy to archaeology, including its valuable incorporation of Steward's cultural-ecological and evolutionary perspective, also has bequeathed a set of self-imposed limitations and particular problems that need to be recognized and considered by all archaeologists conducting settlement pattern studies (and see Moseley and Mackey 1972).

Thus I caution that the spatial parameters of archaeological survey do not necessarily correspond to the regional and cultural boundaries perceived and established by ancient people. Furthermore, the pervasive environmental and cultural-ecological orientation inherent to most settlement pattern studies has ignored or understated the cultural creation of landscape, including the landscape conceptually and physically constructed as sacred. In turn, a facile economic-extractive model of landscape has led to the construction of multilevel decision-making site hierarchies that, in the absence of a database derived from excavation at a range of sites, may result in insufficient or inaccurate models of ancient sociopolitical organization. Particularly at multicomponent sites lacking marked horizontal stratification, survey may be methodologically ill equipped to define site size, population size, and population density. Yet it is upon these calculations that site hierarchies are created. These artificial units of analysis are then glossed into levels of sociocultural integration along stagelike evolutionary trajectories that obscure the intensely varying cultural content of the societies we study. I will now expand upon the points just made.

Regions and the Boundaries of Archaeological Survey

Archaeologists establish survey regions in order to study the phenomena occurring within these analytical boundaries. This practice is geographical in nature: "one of geography's central objects of study is the region, the place, the specific area" (Allen, Massey, and Cochrane 1998: 1).

The inherency of the region to archaeological survey is concisely stated by Kowalewski and Fish (1990: 261): "Archaeological survey is the basic means of producing knowledge about past regions." But, as in the field of geography, so, too, archaeology is currently debating the "question of 'place,' at various scales and in various guises, . . . [and] questions of boundaries, borders and spatiality more generally. All this has raised issues of theoretical approach, and even of the nature of theory itself; of the conceptualization of places and of their practical definition; and of what should be studied 'within' them" (Allen, Massey, and Cochrane 1998: 1; see also Soja 1989; for cognate expressions among archaeologists, see Bender 1993; Tilley 1994 *inter alia*). In other words, how should the region be defined, and who should define it? Is the contemporary analytical unit (itself an artifice of our construction) coterminous with the ancient physical and cultural units of sociopolitical life? If not, how can survey—no matter how methodologically rigorous—yield valid and meaningful information?

Survey methodology must suit the problem under investigation in pragmatically satisfying ways. Parsons (1990: 11) writes, "If we are mainly interested in describing and explaining settlement systems . . . then we will have to figure out some way to estimate how spatially extensive such systems may have been so that survey regions can be adequately defined as early as possible in the research process." As Parsons (1990: 10) indicates, most archaeologists have an intuitive sense of what the term *region* connotes. But Parsons's discussion reveals that intuition is based on the highly positivistic yet ambiguous criterion of size. This problem is apparent in Crumley and Marquadt's (1990: 75) important consideration of regional analysis in archaeology.

A recognizable region emerges when there is consensus both about what characteristics are important and about their concomitant spatial representations. When we define a region, we do so because we can comprehend, identify and select it as a unit in its relationships with other units; thus, the use of the term *region* is always with respect to a certain perceptual size. It is defined at a scale at which the researchers believe they can distinguish pattern. To find an appropriate scale of analysis one must search for (1) a measure of the connectivity (at different scales) of the area under consideration with contiguous areas and (2) areas that seem to exhibit a high degree of overlap of a variety of boundaries.

The etic nature and imprecision of the regional bounding issue also are clearly visible in Kowalewski and Fish's

(1990: 262) imperative that full-coverage survey be conducted in “large, contiguous blocks of terrain systematically, at a level of density commensurate with the research questions being asked.” In addition to the pragmatically vague prescription for commensurality, the mandate of physical contiguity is not universally valid. For instance, among certain highland societies of the precolumbian Central Andes the landscape was socially, economically, and politically organized in physically discontinuous “vertical” islands of territory located in distinct ecological niches that could be shared among different ethnic groups (see Murra 1972).

Cowgill (1990: 251) proposes a consciously actor-focused definition of region, exhorting archaeologists to “try to include all the area occupied by people likely to have been in frequent close interaction with one another.” Of course, here we confront the problem of a priori versus post hoc knowledge. The solution to that problem may be to subsequently and inductively aggregate data from smaller surveys to form the thereby demonstrated region. Yet there may have been culturally determined definitions of and differential participation in “regions” that today can defy or confound archaeologists’ necessarily materialist approach.

For instance, Sherbondy (1992: 57) has shown how in Inca times “different peoples or ayllus could link themselves together on the ideological basis of the connections between bodies of water and thus form local regions.” The water routes need not have been actual but could, instead, have been believed to exist as part of a vast cosmohydrological map of the universe. Sherbondy (1992: 58) recalls that indigenous peoples of Huánuco, in the central Peruvian highlands, believed that the Wari people (ca. 550–900) had built a channel from Lake Conococha to villages almost a hundred kilometers away. There is no scientific evidence to support this belief, but the territory was “mentally conceptualized as one hydrological zone.”

In coastal Peru, river drainages are clearly circumscribed by the Pacific Ocean to the west, the Andean highlands to the east, and desert to the north and south. These geohydrographical units traditionally have formed convenient research parameters: the survey region. However, this headwater-oriented perception of the Central Andean coastal landscape may run contrary to aboriginal cognition or not fully represent it.

To further illustrate my point, let us consider the Río Grande de Nazca drainage on the south coast of Peru. The Río Grande de Nazca drainage is unique because it is geomorphologically configured like the fingers of a hand joined at the wrist, with narrow ranges of hills sep-

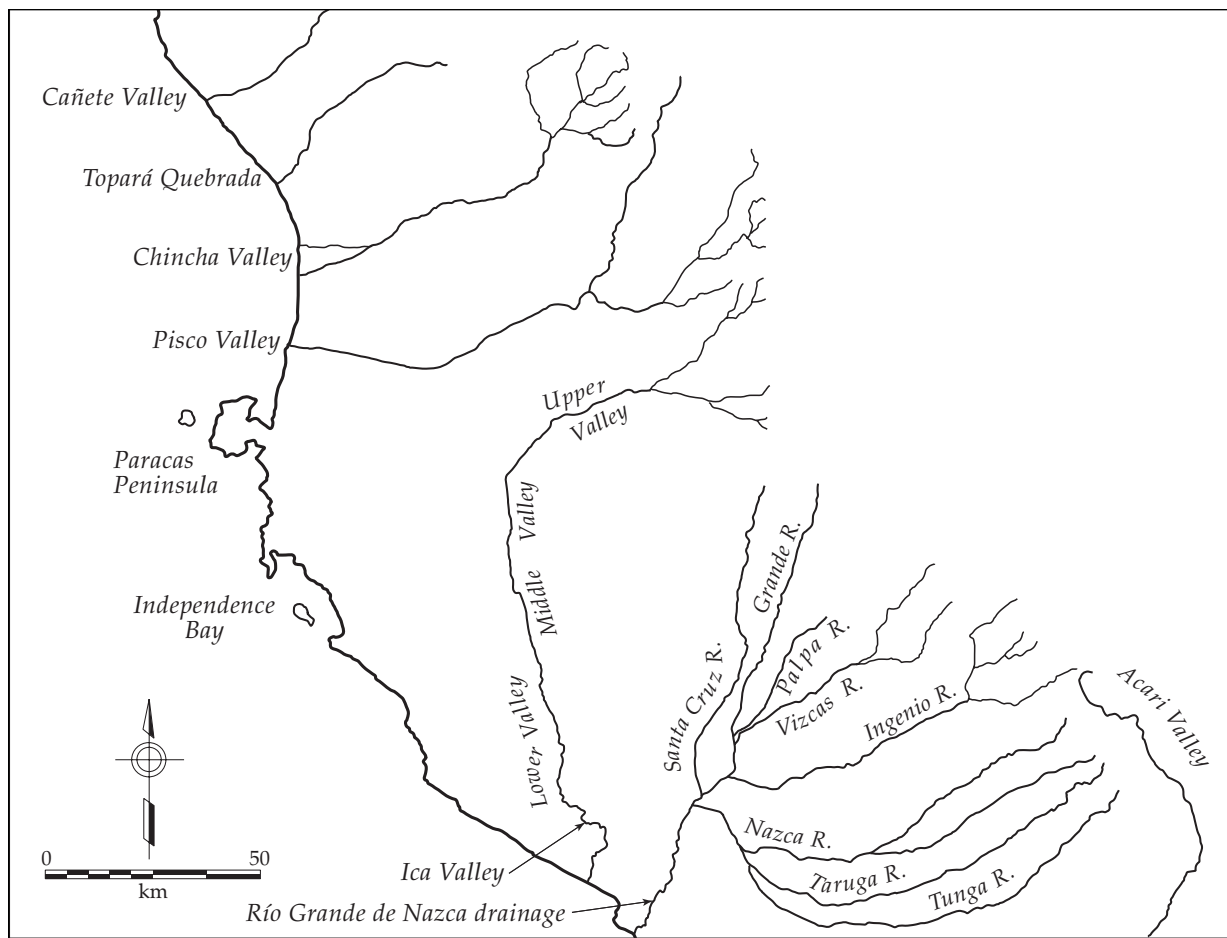
arating one valley from the next (fig. 1.1). There are ten discrete river valleys, each with its own headwaters in the highlands but with a shared exit to the sea (the Grande River).¹ The headwaters of some of the tributaries are quite distant from one another and encompass rugged highland terrain. The north-south distance within the drainage is well over fifty kilometers; the east-west length of individual valleys may be as great or greater. Although the mouths of the Ica and Grande Rivers are less than twenty kilometers apart and within eyeshot on a clear day, inland the river valleys diverge greatly.

Yet for Kroeber (1944: 24–25), this distance between Ica and Nazca paled in comparison to the distances separating Ica-Nazca from the valleys to the north and south. Kroeber considered Ica-Nazca a region, emphasizing that the “degree to which the . . . region is set apart is shown by the distances between river mouths.” But Kroeber was seeing the river valleys through modern, nonindigenous eyes. It is important to recognize that the significant tracts of arable land in Ica and Nazca are located upstream, away from the shoreline, and that inter-valley connections are shortest between the foothills located at or near the valley necks rather than along the coast.

Early on, the name of the Nazca River proper came to represent the entire Río Grande de Nazca drainage. The original group of Nasca scholars operated within the western geographical paradigm that a river’s single exit to the sea equals a single valley. Thus the actual multi-tributary configuration of the drainage was downplayed, and it came to be treated as a single cultural-hydrological unit (see, e.g., Gayton and Kroeber 1927: 41; Kroeber 1928: 8).

This oversimplification of south coast geography affected archaeological interpretation of the then–newly discovered Nasca pottery style. The Nazca Valley proper was identified as the heartland of Nasca culture on the basis of the range of variation in its Nasca pottery (Joyce 1912; Putnam 1914: 17; Uhle 1914: 15), following the linguistic argument that the center of diversity is the core territory of the behavior: “The style of the ware is that variously referred to as Nazca, Proto-Nazca, Nasca and Pre-Nasca . . . , names derived from the focal point of its regional distribution” (Gayton and Kroeber 1927: 2). The early scholars imposed a cultural unity on the Río Grande de Nazca *drainage* while remarking on the great diversity of the Nasca ceramic style within the *valley* (in other words, the Nazca River).

Multiple valleys formed the ancient culture venue. Indeed, Kroeber (1928: 8) argued that Nasca material from the Río Grande de Nazca drainage was varied because of



1.1. Map of the Río Grande de Nazca drainage and other valleys of the south coast.

the number of locations within the drainage from which it came.² (In addition, different functions and various social, economic, political, and ritual contexts in the Río Grande de Nazca drainage all must have contributed to the observed ceramic diversity of Nasca pottery.) It is clear by reference to a map that Uhle's collections of Nasca pottery from "Nazca" (which Kroeber studied) actually came from eighteen distinct named geographical proveniences located in the several valleys of the southern half of the Río Grande de Nazca drainage (see Gayton and Kroeber 1927: 3–4, fig. 1). In comparison, Uhle's Nasca pottery from Ica came from the small Ocucaje Basin with the exception of three Nasca tombs from Santiago in the middle Ica Valley (Gayton and Kroeber 1927: 101; Uhle 1914). Subsequent fieldwork in Ica has demonstrated the existence of all Nasca phases in Ica (e.g., Cook 1999; Massey 1986; Menzel 1971; Menzel, Rowe, and Dawson 1964; Sawyer 1966; Williams León and Pazos Rivera 1974).

In the early era of Nasca research, a larger population

in the Río Grande de Nazca drainage than in Ica was assumed because for many years more fieldwork was conducted in the former (i.e., Uhle's purchases in 1905; Tello in 1915 and 1926–27; Farabee in 1922; Kroeber in 1926) than latter (Uhle in 1901, when he discovered the Nasca style), and this more extensive and intensive fieldwork therefore recovered more Nasca pottery. Kroeber (1944: 24) wrote that Nasca culture "was probably more florescent, and . . . its remains are at any rate better preserved, in the southern group of affluents" of the Río Grande de Nazca drainage. Subsequent fieldwork in the northern valleys of the drainage has identified hundreds of Nasca sites of varying size, complexity, and function (Browne 1992; Browne and Baraybar 1988; Reindel and Isla 1999; Silverman 1993a: 324–331, 1993b).

Given the multivalley distribution of Nasca pottery in the Río Grande de Nazca drainage, which, as per Cowgill (1990), presumably indicates participation in an integrated social system, where should we delimit the boundaries of the Nasca cultural region for the purpose of sur-

vey and settlement pattern analysis? Can a single tributary of the drainage suffice for cultural interpretation? The issue is particularly important because archaeologists currently working in the Río Grande de Nazca drainage have “divided up” the drainage by valley for the purpose of conducting full-coverage survey directed at understanding ancient Nasca society. As I have indicated, an approach to Nasca by single valley cannot provide all the information necessary for accurate cultural reconstruction and explanation.

Furthermore, I argue that the ancient Nasca conceived of their milieu situationally, in geographic, hydrological, ecological, cultural, economic, social, and other terms and in overlapping, complementary ways. By “situationally” I mean that this physical entity was, and should be, understood as space and place vivified by social relations, constituted by “spatialized social relations—and narratives about them—which not only lay down ever-new regional geographies [the palimpsests of evolving sociopolitical formations and their corresponding settlement patterns], but also work to reshape social and cultural identities and how they are represented” (Allen, Massey, and Cochrane 1998: 1–2).

The word *situationally* also has a strong temporal aspect: a region exists at a particular time and is constantly evolving and changing at different rates systemically and subsystemically. Archaeologists’ abilities to recognize such change typically run in generational or longer blocks of time. As Crumley and Marquadt (1990: 75–76) observe, “A region never has the same meaning, nor does it occupy the same boundaries throughout its history.” And Kubler (1970) has highlighted the existence of center and peripheries of spatial action and slow and fast temporal boundaries.

Also (but much less easily identified in the archaeological record), the spatiality of social relations that produced sites—broadly understood—and was recursively constructed by them was subject to constant negotiation. An excellent example of this process is provided by Sherbondy (1992: 56–57) for the Incas.

Beginning with Inca Roca, the Incas brought water to Cuzco from a spring in the bedrock of an island in Lake Titicaca and anointed each new king with it. . . . This ritual anointment with Titicaca water also performed the function of legitimizing the displacement of the territorial center of the Incas from their cave of emergence, Pacariqtambo, to Cuzco. This was necessary because the myths of origins implied that the distribution of peoples was somewhat fixed, having been

determined by Wiracocha [the Creator God] at the beginning of the world. Yet in reality peoples moved around. The refoundation of an ayllu at a new site could be ritually accomplished by carrying water from the ayllu’s previous water source into the new territory, where it was poured into the springs on the new land. Then the new water source was given the name of the old site of emergence . . . The Incas were refounding their ayllu at Cuzco every time they brought water from Lake Titicaca . . . This act may have been doubly effective . . . in terms of establishing their right to the lands and waters of Cuzco.

Because the Peruvian coast is a desert, and agriculture was dependent on irrigation, it is likely that the discrete headwaters of each valley of the Río Grande de Nazca drainage were culturally significant for the ancient Nasca people, just as concepts about water were key elements of Andean ideology and ethnogenesis overall (see Sherbondy 1992: 52–53). At the same time, we must recognize the corollary importance of Ramírez’s (1996: 42) observation that the “study of the system of land and tenure is crucial to an understanding of the political economy and social structure of any agrarian society.” Ramírez (1996: 45) argues that we must seek to establish “how the natives themselves conceived of land and its use. Access to land cannot be rightfully separated from indigenous ideas about their past, their kinship system, and their functioning political economy. In fact, indigenous land tenure patterns were manifestations of these values and beliefs.” Of course, for Ramírez, the reconstruction of the late precolumbian system is facilitated by written documents (bearing in mind her acutely noted cautions on cultural-linguistic translation). We really can make only speculative statements about ancient Nasca society given the immense gap in time, space, and cultural evolution that separates Nasca from ethnohistory, and, due to insufficient research, we do not yet have a body of south coast ethnohistorical documents to which to refer.

Let us look at the Río Grande de Nazca drainage as its ancient inhabitants *may* have, based on an admittedly rather gross essentialization of “Andean,” and compare this hypothetical yet plausible viewpoint to the one presented in the early scholarly literature. I suggest that in Nasca times the Río Grande de Nazca drainage was multiply conceived as:

1. a drainage in which the relatively great distance between the northernmost and southernmost valleys could have provided a hedge or social safety net against bad years when one valley might receive

more or less rain-fed irrigation water than another, based on the location of the headwaters in the highlands;

2. a series of individual valleys (Santa Cruz, Grande, Palpa, Vizcas, Ingenio, Aja, Tierras Blancas, Nazca, Taruga, Las Trancas), each distinct, each with its own headwaters, and each valley commensurate with the others;
3. areas with and without accessible subsurface water; the middle sectors of the valleys of the southern half of the drainage were probably conceptually and effectively distinct for this reason (I have argued previously that the existence of this independent source of water had the potential to differentially affect cultural and sociopolitical development in the drainage overall; see Silverman 1993a: 11);
4. two halves or moieties (north and south) with the Pampa between the Ingenio and Nazca Valleys being the division and connection between the halves (see Silverman 1993a: chap. 23; Urton 1990: 197);
5. altitudinal or ecological bands running across the low hills (the foothills of the Andes) separating the valleys like the knuckles of a hand;
6. river junctions where the distances between valleys are mere meters; these junctions should have been perceived as prime areas for human occupation because they could be irrigated with water from more than one river;
7. river junctions in the sense of the indigenous concept of tinkuy (the place where two rivers converge, a zone of confrontation and cooperation between social groups, the complicated act of achieving balance between opposing forces; tinkuy are socially and supernaturally charged places of competition, cooperation, and structural balance; see Fonseca Martel 1981; Platt 1986; Poole 1984);
8. single long valleys in which an upvalley and downvalley distinction was made. I believe that this conceptual distinction, perceived by Urton (1990: 196–197) in the ethnohistorical documents, is directly related to the real lack or presence of accessible subsurface water. Along the Nazca River, the “parcialidad de Cantad [Cantalloc]” (upriver) as opposed to the “parcialidad de Nasca” (downriver) surely reflects the readily observed emergence of subsurface water to the surface around Las Cañas (compare Urton 1990: fig. IV.13 to Schreiber and Lancho Rojas 1995: figs. 2, 5).

The multitransitory configuration of the drainage must have promoted and facilitated areal interaction for a va-

riety of social, economic, political, and ritual purposes. For instance, trade and exchange relationships and other sociopolitical arrangements could have transected the valleys along a particular altitudinal line of easy cross-valley access, rather than having conformed to the length of territory created by the river course. Such a potentially multivariate situation cautions against the uncritical use of a single valley as an analytically valid survey unit and, in the larger context of my argument here, exemplifies the validity of the following statement by Allen, Massey, and Cochrane (1998: 9):

Spaces/places are constructed both materially and discursively, and each modality of this construction affects the other. Moreover, every place or region “arrives” at the present moment trailing long histories: histories of economics and politics, of gender, class and ethnicity; and histories, too, of the many different stories which have been told about all of these. The complex ways in which a region is constructed and read at any time is a result of these histories and of what is made of them.

Recognizing Complexity on the Landscape

Wiley (1953) discovered more than three hundred sites in the Virú Valley. At the time, he faced an analytical challenge without precedent in Peruvian or world archaeology. The solution he devised was to create a functional classification of settlement types in order to represent the registered sites as “units or categories of prehistoric activity” (Wiley 1953: 6). Of particular and precocious importance was Wiley’s statement that “there are different orders of functions” and that these orders were meaningful to ancient peoples. Furthermore, some sites could have had nested multiple functions with a range of meanings attributed to them by their creators. Wiley’s basic classification involved four functional categories: habitation sites, civic/community-ceremonial sites, fortified strongholds or places of refuge, and cemeteries.

Wiley’s scheme hinted at what have come to be known as site hierarchies. The concept began to take form in Wright’s (1969) study of the administration of rural production in an early Mesopotamian town in which he discussed levels of information and decision making. This approach was further elaborated by Johnson (1972, 1973) in his research on local exchange and early state development in Mesopotamia. Johnson (1973: 2–3) explicitly defined the state as having a hierarchically structured decision-making organization, minimally of

three levels that manifest themselves in space in terms of settlement patterns. With Wright and Johnson's (1975) influential article on the sociopolitical correlates of differentiated settlement patterns on Mesopotamia's Suse Plain, the concept of decision-making hierarchy became codified as the prevailing paradigm in settlement pattern archaeology, dominating the past quarter-century of settlement pattern archaeology in diverse world areas (e.g., Parsons 1971; Isbell and Schreiber 1978) and being extended to encompass complex but nonstate societies (e.g., Peebles and Kus 1977).

Parsons (1971) refined Willey's scheme in his Texcoco settlement pattern study to encompass notions of political hierarchy. Thus Parsons (1971: 22) speaks of primary regional centers, secondary regional centers, segregated elite districts, nucleated villages, dispersed villages, hamlets, camps, and isolated ceremonial-civic precincts. Parsons and other practitioners of what I call the Michigan School (e.g., Johnson 1973; Wilson 1988; Wright 1969; Wright and Johnson 1975) all speak about decision making in their considerations of complex society, specifically, the state.

The decision-making site hierarchy paradigm was first applied to the Central Andes by Isbell and Schreiber (1978). It entered the south coast literature with Massey's (1986) and DeLeonardis's (1991) investigations of Nasca and Paracas, respectively, in the Ica Valley. I believe that these south coast studies are flawed by analytical procedure. Whereas Johnson (1973: 15) was explicit that the decision-making hierarchies intuited by the settlement pattern analyst from the field data concerned functional size (i.e., the number of types of activities carried out in a settlement), these recent south coast studies have reduced the scheme to a comparative ranking of site size.

Two basic operationalizations of the decision-making hierarchy approach are clearly identifiable in the literature. One concerns population size, and the other deals with which sites are analyzed.

Population Size

Settlements are recognized as differentiated on the basis of inferred population size (the number of people in a settlement), and functional size (the number of activities carried out in a settlement), which are assumed to be directly proportional: "population hierarchies indicate functional hierarchies" (Johnson 1973: 15). Johnson (1973: 64) states: "Population estimation for individual settlements includes two critical components: estimation of population density in a settlement and estimation of the areal

size of a settlement." Population is estimated on the basis of ethnographic figures (Johnson 1973: 66) or estimated carrying capacity based on the production system imputed to the past (e.g., Wilson 1988: 84–86). The area of a site is determined by period by the extent of temporally diagnostic potsherds on a site surface or as revealed for the subsurface through sampling excavations (e.g., Johnson 1973: 73). Areal sizes for the surveyed sites are translated into descriptive incremental terms that correlate with hierarchically increasing population size and functional size (Johnson 1973: 73). Common hierarchical terminology includes village–large village–small center–large center (Johnson 1973: 73) and camp–hamlet–dispersed village–nucleated village–segregated elite district–secondary regional center–primary regional center (Parsons 1971: 22), according to the kinds of remains in the particular survey area. All current terminology ultimately derives from Willey's (1953: 7) functional classification of sites.

In his analysis of the data from his Santa Valley survey, Wilson (1988: 78–79) established functional site categories and, going well beyond Willey, suggested population figures under the rubric of occupational density. Wilson proposed the existence of hamlets (5–99 persons), small villages (100–499 persons), large villages (500–2,000+ persons), and architecturally unique local and large regional centers. Wilson arrived at his estimates of Santa Valley population by counting discrete habitation units per hectare and assuming five persons per unit, considering the relative density of structural remains and the site size, and calculating carrying capacity of the land. Like Wilson, Schreiber and Kintigh (1996: 578–579) also believe that prehistoric population can be estimated by counting terraces, houses, or compounds. I have several interrelated objections to Wilson's and Schreiber and Kintigh's procedures that I now explain.

We must recognize that in the traditional ethnographic (and ethnohistorical) Andes, people organize along multiple lines of identity, allegiance, and solidarity. These multiple and crosscutting identities are activated by context and informed by historical contingency. Thus people live in or on and consciously construct or cognitively construe multiple landscapes that vary enormously in scale, inclusivity, and exclusivity. A tangible village of visible parameters is only one point of reference for the social, political, economic, and ritual worlds inhabited by villagers. There is a ritual division of society into moieties that can be coterminous with the population of a single village. There are ayllus. There are households. There are different and hierarchized categories of ritual participation. There are private and public and recipro-

cal and nonreciprocal labor mobilizations that may occur in or transcend the village.

Also, the underlying premise is that all of a domestic site's structures or units are habitation remains. However, residential use, though likely on the basis of surface remains for an entire site, must be proven by excavation. Particularly in the case of terraced hillsides, some terraces could have been dedicated to activities other than shelter. Also, "house" (an architectural construction) is often conflated with "household" (an autonomous social, economic, political, and managerial unit of production, exchange, and consumption that is integrated by culturally defined kinship ties). The nuclear family is usually calculated at five persons, as Wilson has done. This may be accurate for Nasca given what appears to be a five-member Nasca family depicted on the ceramic tablet published by Tello (1931). But family is not synonymous with household. We do not know the numerical composition of the Nasca household. Moreover, households change in composition over time through immediate biological, economic, and social factors (this is the life cycle of a household). Households also change in composition and nature in accordance with the social and political conditions in a given society.

My ethnographic observations in the upper Ingenio Valley reveal that current farming households living in hillside settlements occupy more than one terrace, and they frequently move across hillsides over time. A household is physically composed of one to several houses (minimally, buildings where people sleep) plus corrals, patios, and various special purpose structures such as storage facilities, an outdoor kitchen, drying racks, and other physical facilities and spaces. Not all are necessarily in use at the same time. Not all are built at the same time. All are in different states of repair and abandonment. These spatial units are spread vertically and horizontally over several terraces. Thus, on survey, the number of terraces at a habitation site cannot be used in a 1:1 equation of terrace equals household because over a brief time a household is capable of creating a multiteraced site whose population size and density would be overestimated by a counting type of archaeologist. When a contemporary settlement consists of several households, this diachronic pattern is even more pronounced.

Schreiber and Kintigh (1996) have shown convincingly that population size cannot automatically be securely derived from site size as revealed by survey, even in the best of circumstances. In the specific case of Nasca, the finely differentiated phases of the Nasca ceramic sequence were defined on the basis of the most elaborate grave goods. This fancy ceramic material is

scarce and fragmentary on the surface of habitation sites, making precise phase identification often difficult or even impossible and, consequently, impeding the estimate of site size by phase.

Again in terms of Nasca, overall scarcity of surface pottery at most Nasca habitation sites also means that it is risky to draw correlations between surface sherd density and population size, as others have argued (e.g., Parsons 1971: 23), if, indeed, that is an unambiguous procedure. Furthermore, on multicomponent Nasca sites the relative scarcity of diagnostic surface pottery may correlate with a lack of (discernible) horizontal stratigraphy, again making it foolhardy to trace and measure site growth and decline or to claim one or another phase as the main occupation period. Complicating matters even more, some Nasca habitation sites have cemeteries, either contemporary with or postdating the domestic occupation. These cemeteries are recognizable because they are looted. Looting has churned up site surfaces and confuses the distribution of materials on site surfaces.

I regard Wilson's (1988: 42–54, 84–86; see also Massey 1986) estimate of carrying capacity as a circular argument because the method involves current levels of maize production, hypothesized crop rotation, fertility, and assumed diet, and it argues back again to inferred population size. For Nasca, maize-based calculations are premature and, conceivably, would be erroneous given the varied diet of Nasca people, to judge from the remains of their feasting at Cahuachi (Silverman 1993a: chap. 20) and the variety of foods portrayed on their pottery and textiles (e.g., O'Neale and Whitaker 1947), including tubers as well as marine and riverine products. Until there is statistically significant paleobotanical data from habitation sites, we will not know the relative proportions of foods in the daily Nasca diet.

Also, we cannot accurately estimate the amount of land under cultivation period by period because the valleys of the Río Grande de Nazca drainage are so narrow that ancient irrigation canals (not the filtration galleries) have long been buried by agricultural expansion or other mechanized earth-moving activities (such as road building), and habitation generally has clung to the hillside margins so as to not occupy arable valley bottomlands. Furthermore, there has been dramatic change in agrarian structure in the drainage since the Spanish conquest and in this century.

Finally, I take issue with the calculation of area under production by period as determined by prehispanic canal and field systems dated by their association with prehispanic occupations, as done by Wilson (1988) and Willey (1953: 362–369). These are useful comparative

measures, but they are a “European” interpretation of indigenous reality, “failing to clearly address the inherent meaning of land and rights in Andean cultural terms and thereby overlooking the labor dimension of land” (Ramírez 1996: 57). Ramírez (1996: 53–57, emphasis in original) cogently demonstrates that for indigenous people,

a fanegada de sembradura (*de maíz de indios*), for example, was the land that could be planted with a fanega (or fraction thereof; e.g., an *almud*, or one-twelfth of a fanega) of seed. This was not an absolute and constant measure, because the amount of land that could be sown with a fanega of seed was a function of the type of seed (e.g., corn, cotton, chili pepper, or yucca), each of which could be planted closer or farther apart depending on soil fertility, climate, water availability, and other factors . . . Likewise, the measurement of a native *topo* differed in various localities . . . some pieces of land were reckoned by the number of plants . . . that could be grown on it. Again this measure varied by crop and locality, thus supporting the native notion that land was measured according to what was needed to sustain a given socially or culturally defined group.

Given the alteration of so many Nasca site surfaces and the scarcity and postdepositional movement of Nasca potsherds, I am reluctant to propose phase-by-phase areal and population estimates, let alone discuss site activities beyond general categories. It would be circular reasoning to estimate population size on the basis of site area, to use site size to derive population figures, and to use both of these to create functional hierarchies.

Rather than inventing phase-by-phase population estimates that pretend to mimic historical census data, for the sake of accuracy I prefer more qualitative statements of the relationship between food supply and population, such as those originally made by Willey (1953: 390–395). Willey spoke in terms of an increase or decrease of land under cultivation as seen in settlement patterns and relic field and irrigation systems, numbers of sites, size of sites, and occupation or abandonment of particular parts of valleys, and he incorporated actual subsistence data from excavations carried out complementarily to site survey. When Willey (1953: 394) finally suggested a population figure, he did so on the basis of “a conservative ratio of 1 person to 1 acre,” which permitted comparison across periods on the basis of the well-defined parameters of the Virú Valley’s ancient agricultural system.

Yet even this broad procedure is problematical, for such a calculation does not take into account the evo-

lutionary social parameters of food production in Polanyi’s (1957) sense of the economy being embedded in social relations (redistribution, reciprocity, exchange) and Pearson’s (1957) consideration of whether the economy has surplus. In other words, there may be times or sociopolitical circumstances when (particular) land is farmed expressly to support ceremony or armies or any number of possible scenarios requiring production above stable individual caloric requirements, not to mention a societally perceived desire for storage of particular food goods or a lack of such an attitude. Intensification of production may be achieved by increased crop rotation, change in the proportions of crops grown, better techniques of fertilization and/or irrigation or drainage, opening up more land, and, of course, requisition from other societies.

Which Sites to Analyze and How to Do So

Willey (1953: 1) defined settlement patterns as

the way in which man disposed himself over the landscape on which he lived. It refers to dwellings, to their arrangement, and to the nature and disposition of other buildings pertaining to community life. These settlements reflect the natural environment, the level of technology on which the builders operated, and various institutions of social interaction and control which the culture maintained. Because settlement patterns are, to a large extent, directly shaped by widely held cultural needs, they offer a strategic starting point for the functional interpretation of archaeological cultures.

Implicit in Willey’s definition of settlement pattern is a view of landscape as naturally occurring. This view continues to be expressed in the literature, albeit with more sophistication, given the advances that have occurred in the field. For instance, the Rossignol and Wandsnider (1992) volume discusses a landscape approach to archaeology in terms of land use seen through the lenses of environmental systems, regional geomorphology, and taphonomy, among other factors. Although detailed physiological contextualization of surveyed and excavated archaeological sites is absolutely necessary because of the paradigm of systemic adaptive strategy guiding the contributors to the Rossignol and Wandsnider volume, they do not consider sufficiently the cultural factors that also created archaeological landscapes on the natural ones they perceive.

Crumley and Marquadt’s (1990) vision of landscape archaeology is much richer. They deal with all manner of

sites, from “population agglomerations” to “roads, . . . unoccupied or infrequently occupied places, such as religious shrines, resource extraction sites, river fords, passes through mountains and other topographical features that societies use and imbue with meaning.” Their view of settlement pattern analysis contrasts with the positivistic decision-making settlement hierarchy approach by which special, nonhabitational functional sites are recognized but excluded from the data that constitute the basis of the decision-making hierarchy (see Johnson 1973: 105, 107). Crumley and Marquadt (1990) provide the crucial aspect missing in so many previous regional analyses, including settlement pattern studies, by dealing with the entire built environment and recognizing that people cognitively, symbolically, and physically construct the landscape. The human aspects of the landscape are well expressed by scholars across a range of disciplines, such as landscape architecture and geography, as seen in the following quotes.

[Landscape] implies people’s intervention and the application of human values . . . Landscape is design of the *mise-en-scène* for human occupation of nature. It is . . . functionally and emotionally related to the needs and uses to which we put nature. Landscapes are cultivated . . . [and] express what we think of ourselves. (Halprin 1995: 242–243)

Landscape . . . does not stand as an absolute geographical site conquered once and for all, and the sitedness of belonging is therefore constantly re-enacted in order to transcend (and simultaneously allow) the vagaries of migration, of movement and of existential uncertainties. . . . the performative aspects of religious activities are considered essential in anchoring belonging and making it (temporarily) tangible through social practice . . . Landscape . . . is thus closely associated to myths (of creation, of origin) and ritual performance. (Lovell 1998: 10)

And similarly to Allen, Massey, and Cochrane’s (1998: 9) statement quoted earlier, Crumley and Marquadt (1990: 74) cogently argue for the sociohistorical contingency of the landscape through political, legal, and economic structures and the interpretation of these sociohistorical structures and physical structures (e.g., climate, topography, geology) in aesthetic, symbolic, religious, and ideological terms that recursively determine and are defined by the landscape. This temporality and situationality is appropriately stated by Lovell (1998: 11), who writes that “if landscape is interacted with, and cre-

ated and defined through human experience, the perpetuation of the concepts surrounding its cultural construction also relies heavily on memory to perpetuate its existence . . . The landscape itself becomes historicised.” The landscape is place, process, and time.

Change in and on the landscape occurs for physical reasons as well as sociohistorical ones. With regard to the latter, Crumley and Marquadt (1990: 74) speak of “the resolution of conflicting and contradictory interpretations of the meaning of sociohistorical structures,” what I referred to above as negotiation. Clearly, the determinants of settlement pattern do not solely reside in ecology, technology, economics, topography, hydrology, and an exploitable resource base.

We also must work from the perspective of the built environment, which encompasses the nonarchitectural creation and/or use of space as well as buildings *per se* (see summary in Lawrence and Low 1990). The built environment is the projection of culture onto nature (Crumley and Marquadt 1990: 73), or, adapting a famous phrase of the great architect Ludwig Mies van der Rohe, it is the will of an epoch translated into space. Human beings imbue space with meaning, thereby creating places and, ultimately, the landscape. The settlement pattern system that results is coherent; it is as ideologically driven as it is environmentally responsive and manipulative.

To fully engage in societal reconstruction, explanation, and interpretation, archaeologists need to consider the nature and potential effects of ancient ecocognition and cosmology on human settlement. Archaeology, ethnohistory, and ethnography must be used together, in addition to ecological and natural environment studies, in order to study the landscape in a broader and more nuanced manner, recognizing that ancient people culturally constructed and physically modified the given tangible properties of their world in significant ways, the meaning of which must be elucidated if we are to contextualize settlement patterns within the society to which they corresponded.

Some of the most significant aspects of an archaeological landscape may not be conventional sites (e.g., the discussion of huacas, below) or may be cognitively linked sites (e.g., the landscape within which action occurred in the Huarochirí Manuscript; see Salomon and Urioste 1991) whose interrelationship only a fuller approach (see below) can reveal. Other aspects of material culture, such as status-conferring or ideology-bearing objects, also must be considered in this fuller approach since all material culture has spatial and temporal referents that contextualize its use; that contextualization is landscape.

To specifically illustrate the point I am making, let’s

compare ONERN's (1971: 1–206) description of the Río Grande de Nazca drainage to a culturally Andean one.

The Río Grande de Nazca drainage . . . covers an extension of 10,750 square kilometers. The valleys of the drainage have 12,920 hectares of net arable land . . . The premountain desert formation extends from the littoral to 2,000 meters above sea level . . . It possesses five sectors of use: coastal agricultural valley, quebrada agricultural valley, lomas, desert plains, and arid mountainsides. The climate is arid and semihot. . . . Average annual rainfall is 3.8 millimeters . . . Geologically . . . [it] is formed by a varied arrangement of sedimentary, metamorphic, and igneous rocks . . . The study of soils in the valley reveals that . . . the soils of Class 1, considered as those of the best agricultural quality, cover a surface area of approximately 10,180 hectares and occupy deep, flat lands of medium texture, good porosity, and permeability. These are soils of excellent drainage, and they are free of soluble salts . . . [The total river discharge] for the period 1932–1969 shows an average volume of 645.43 million cubic meters . . . The Santa Cruz River . . . has a narrow riverbed with scarce or no running water. . . . The Grande River is the mother river of the hydrographic system . . . The Palpa River originates above Llauta. . . . The Vizcas River has its origin at the confluence of the Laramate and Ocaña Rivers, is 76 kilometers long . . . The Palpa-Vizcas system creates an extensive cultivation zone that is 2 to 3 kilometers in width and constitutes one of the most populated zones with the greatest variety of crops. . . . The Ingenio River originates around Otoca . . . The Nazca River originates at the confluence of the Aja and Tierras Blancas Rivers . . . Only the Grande, Ingenio, Palpa-Vizcas, and Nazca Rivers can be considered rivers, as the others have such scarce water and the hydraulic regime is so variable that there are long periods of total drought . . . whereas the other valleys suffer from serious limitations to agricultural activity without it being totally curtailed. . . . There are subterranean waters in the drainage.

ONERN's study of the Río Grande de Nazca drainage (and the ONERN studies dealing with other coastal and highland valleys) was conditioned by and predicated upon the realities of Peru in 1970, an underdeveloped country aiming for self-improvement and escape from the cycle of dependency under a progressive, proactive, leftist military dictatorship. The ecological, environmental, climatological, hydrological, and other development-relevant data recorded by ONERN were important for

the planning enterprise of the new power structure of the Peruvian government (a point brought home on a global scale in Foucault 1980: 75). ONERN's data continue to be useful to archaeologists, but only to outline the general parameters and constraints within which an ancient society could have operated. These data are necessary but insufficient for achieving a holistic perspective on ancient settlement patterns if used by archaeologists exclusively, for they exclude sensitivity to and recognition of the ethnolandscape and emic regionality and the mutability of these.

There *was* a distinct Andean cognition of the physical world in precolumbian times. It *is* recoverable from a variety of sources, all of which show it to be far different from our Western conceptualization (as exemplified by categorized studies such as ONERN's). As revealed in the Huarochirí Manuscript (Salomon and Urioste 1991), in the ceque system of Cuzco (Bauer 1998; Zuidema 1964), in Hernández Príncipe's (1923) discussion of Recuay's mythology, and in numerous other historical and ethnohistorical accounts, the Andean world was animistic. It was populated with supernatural beings, sacralized mountains, lakes, springs, irrigation canals, boulders and caves, numina-lodging objects, and anthropomorphized forces of nature—a world of huacas. This world was gendered (albeit with ambiguities), and it was based on social relations. It also was temporalized, and time and space/place were inseparably bound in a concept called *pacha* (see Salomon 1991: 14). It was an integrated world with a well-articulated body of philosophical principles and values that ordered and was ordered by “a continuous attempt to maintain balance, harmony, and equilibrium in the material, social, and moral spheres of community life” (Urton 1997).

With many visible markers, the Andean landscape was a macroscale text that could be read en route and by looking up at the sky (e.g., Urton 1981). The Andean textualization of space created a legible landscape, to borrow Lynch's (1988) concept, for its occupants. Andean peoples' territoriality was a “mental map of social groups attached to place-deities and localized ancestors . . . Immense huaca-studded spaces of canyons and high tundra, fields and trails, embodied an Andean world view” (Salomon 1991: 23). To impose our highly positivistic settlement categories of elite centers and secondary centers on such a world is to commit a travesty as gross as the oft-criticized Spanish conquerors' translation of Andean society into sixteenth-century Iberian cultural terms. The challenge for contemporary archaeologists is to achieve cultural literacy of the ancient Andean landscape.

Following Urton (1990), I have argued (Silverman

1993a: 342–343) that the ancient Nasca conceived of their drainage in two halves or moieties, split by the 220-square-kilometer Pampa, itself a tinkuy. Other tinkuy such as Palpa-Grande, Vizcas-Grande, Grande-Ingenio, Aja-Tierras Blancas, and Nazca-Grande exist in the Río Grande de Nazca drainage because of its multitributary configuration.

Cerro Blanco (white mountain) is a huge sand-covered mountain that is one of the outstanding topographical features of the Río Grande de Nazca drainage. It is located at 2,076 meters above sea level on the south side of the Tierras Blancas tributary. Gary Urton (ms.) has collected local legends associating Cerro Blanco with irrigation water; he suggests it figured in rain-inducing rites. Cerro Blanco is highly visible in the region, where many filtration galleries are located (see Schreiber and Lancho Rojas 1995: 239, fig. 11). Urton recorded a legend that attributes the origin of the underground filtration galleries to Viracocha's penetration of the earth at Cerro Blanco. Reinhard (1988: 12–21) presents abundant ethnographic and ethnohistorical evidence showing a tight relationship between mountains, water, and fertility in the Andes, an argument he plausibly extends to Cerro Blanco and the Nazca region at least as far back as the Late Intermediate Period. It is likely that Cerro Blanco figured prominently in the Nasca landscape as well.

Any reconstruction of settlement patterns and definition of territories of bounded social groups in the Río Grande de Nazca drainage must take into account the spatialized sociopolitics and ritual of irrigation networks (especially insofar as the filtration galleries are concerned), including the possibility, at least, of ritually and possibly effectively hierarchized levels/groups of society, as well as the counterpossibility that the reliable underground water supply inhibited the need for or growth of such ranking. The Incas constitute a documented example of how water and sociopolitical organization could interdigitate in the Andes (see Sherbondy 1982; Zuidema 1986).

The making of geoglyphs also constructed the Nasca cultural and social landscape (Silverman 1990b, 1993a: 308). Some scholars speculate that among their various functions, they also pointed to water flows, either surface (e.g., Aveni 1990) or subsurface (e.g., Johnson 1999).

Cemeteries have been recorded during surveys in various parts of Peru, including the south coast (e.g., Kroeber and Collier 1998; Robinson 1957; Tello 1917). Wilson (1988) has demonstrated particular and admirable concern with the distribution, association, types, and nature of cemeteries and the possibility of foreign influences on burial patterns. However, no survey report has taken the

next step in analysis: interpretation based on the fact that the dead were an active part of the living world in the Central Andes (see, e.g., the Huarochirí Manuscript; Isbell 1997). What does it mean to have a mortuary settlement pattern directly associated with habitation sites, civic-ceremonial centers, and geoglyphs, as well as removed from these? Suffice it to say here that cemeteries were an important aspect of the ancient landscape, one that must be considered in dealing with settlement patterns and the reconstruction of society on the basis of these.

Archaeologists frequently record civic-ceremonial sites on survey. They existed in the Río Grande de Nazca drainage in the Nasca period; Cahuachi is the preeminent such center (Silverman 1993a). What is less easily identified on survey are those places that were huacas in the strictest sense of the word. Salomon (1991: 1) has aptly spoken of “a landscape alive with the diverse sacred beings called huacas.” Because huacas such as mountains, springs, lakes, rock outcrops, and caves may lack architectural materialization or even cultural remains (such as offerings), it is depressingly accurate to conclude that any site registry may not represent some of the most culturally important venues of a particular society—places that may have organized and/or oriented human settlement and movement on the landscape.

Continuing this line of argument, I suggest that there was a range of huacas in the Ingenio Valley and in the Río Grande de Nazca drainage overall that have not been detected for lack of standard archaeological evidence. There is some information about aboriginal huacas in documentary sources. The late-sixteenth-century extirpator of idolatries, Cristóbal de Albornoz (in Duviols 1967), named particular mountain peaks of ritual importance to the native inhabitants of ancient Peru in his “Instrucción.” Albornoz states that a mountain huaca called Sanoc ancavilca pertained to the “Indians of the Nasca” in the “province of Hacari” (transcription of Albornoz in Duviols 1967: 34). Reinhard (1988: 17) identifies this huaca as Cerro Blanco. The most convincing identification of Cerro Blanco as a sacred mountain in the Nazca region is found in Acosta (1940: 359–360), who says that “a large mountain of sand was the principal focus of worship or huaca of the ancient inhabitants of Cajamalca de la Nasca.” Arguedas (1956: 199) briefly mentioned Cerro Blanco in the context of traditional beliefs recorded by him during ethnographic fieldwork in Puquio.

During a pago (payment) made to pachamama (mother earth) at the beginning of my excavations at Cahuachi in 1984, Don Armando Valdivia offered trago (cane alco-

hol) to Cerro Blanco in the east, Cerro Tunga-Huarican-gana in the south, Cerro Pinchango to the north, and Cerro Macho-Coyungo to the west. Tonya Panion (personal communication, 1999) observed Paracas, Topará cream ware, Nasca 3, and Nasca 5 sherds on Cerro Blanco. Making a vast leap, I suggest that the region's territory could have been conceptually delimited and quadripartitioned by these mountains in the past.

Among the places on the landscape in the Ingenio Valley that I hypothesize could have been culturally significant are the peculiar, isolated conical hill in the wide fan where geoglyph Site 166 is located and the tall, panorama-providing hill in the intestine-like narrows (angostura) in which LIP Site 201 is located. Furthermore, that constriction and all river junctions (i.e., tinkuy) must have been highly charged symbolically.

Moreover, a paramount huaca, such as one affecting the population of an entire valley or region, may not be located in the particular surveyed valley yet may have had tangible consequences for the spatial and material organization of an entire society. Indeed, some huacas could have expanded the Nasca's ritual territory to encompass virtually all of southern Peru (see Reinhard 1988: 19–20, map on p. 130). From Cerro Blanco one can see the snow-capped Illakata. Legend says that Cerro Blanco was the wife of Illakata. Reinhard identifies Illakata as the mountain Carhuarazo in Soras (Lucanas, Ayacucho). Reinhard's fieldwork let him determine that there are sight lines between Illakata/Carhuarazo and Coropuna (see Guaman Poma 1980: 272), the most powerful deities in southern Peru in Inca times.

Heterarchical Alternatives to Site Hierarchies

Consideration of landscape in these more societally and culturally aware terms leads to the Full Landscape Approach (FLA), which this book advocates. FLA engages the archaeological landscape in terms of a paradigm complementary to and more inclusive than the materialist-economic-extractive one.

Aspects of FLA date back to nineteenth-century travelers-explorers in the Americas who observed, for instance, that “the architecture of many archaeological sites visually echoed the shape of the surrounding land” (Townsend 1992: 36). FLA has been evolving explicitly in the archaeological literature for several decades (see Flannery and Marcus 1976; Heyden 1975; Zuidema 1964 for early influential examples; there are numerous ethnographic examples not cited here).

By the beginning of the 1980s FLA had become linked to a full-scale international attack on processual functionalism. Early applications of the postprocessual critique are found in the essays by Michael Coe, David Freidel, and Richard Keatinge in *The Transition to Statehood in the New World* (Jones and Kautz 1981) that were grouped under the section heading “Ideological Factors in State Formation.” Ideology became recognized as a key factor in the rise of complex society. Coe (1981) in particular was explicit in his criticism of the then-dominant materialist school; he defended causal consideration of factors traditionally condemned to the status of epiphenomena, such as religion. Hodder's (1982) edited volume, *Symbolic and Structural Archaeology*, also marked a coming of age of postprocessual archaeology. A 1987 School of American Research seminar specifically examined the role of ideology in various precolumbian civilizations (Demarest and Conrad 1992; see also Conrad and Demarest 1984). Townsend (ed. 1992) organized the Art Institute of Chicago's quincentennial exhibit around the theme of sacred landscapes with contributions from scholars working throughout the Americas. These and numerous other publications spurred a new appreciation among archaeologists of the cultural, ideological, social, and sacred natures of ancient landscapes.

FLA encompasses and extends these concepts to the “full” landscape. Symbolic, ideological, ecological, geographical, economic, social, and political factors in site (broadly defined) function, form, and placement all must be considered in order to understand and explain the evolution and varying nature of ancient societies, from simple to complex. As indicated earlier and worth repeating here, by using the word *landscape* I also implicate historical contingency: landscape should be understood as “the product of tradition” (Stilgoe 1995: 184).

This broad view of landscape underwrites and validates Crumley's (1979, 1987) critique of hierarchy and her advocacy of the concept of heterarchy (see, e.g., Crumley 1995; Ehrenreich, Crumley, and Levy 1995). Heterarchy is the quality of a configuration of elements to be unranked with regard to each other or to be ranked in a number of different ways, depending on systemic or analytical requirements (Crumley 1979: 144, 1987). Heterarchy questions the validity of the entire decision-making enterprise. Crumley (1987: 158) argues that there can exist a patterned and even predictable disposition of sites on a landscape that “is recognizable as a mosaic of physical and sociohistorical structures in a particular relation to one another” but that are not hierarchically organized but, rather, are heterarchical in that “each element is either unranked relative to other elements or

possesses the potential for being ranked in a number of different ways.” I have previously applied this perspective to the Nasca settlement patterns of the Ingenio Valley and found it to correspond well to other cases of evidence about ancient Nasca society (Silverman 1993a: 327–333, 1993b).

But, as Brumfiel (1995: 129) cautions, hierarchy and heterarchy are not mutually exclusive concepts. Heterarchical arrangements can exist within states and coexist with hierarchies of control, even strengthening inequality and dominance. My argument here is that heterarchy is a vitally important analytical concept and tool for archaeologists because all societies possess a differentiated landscape owing to their multiple contexts and behavioral scales (e.g., Crumley 1995). Heterarchy recognizes this cultural multivocality and its diverse spatial expressions. Heterarchy enables us to create and test different landscape scenarios according to particular, problem-driven criteria.

For instance, habitation sites, no matter how large, may not be the locus of power in an ancient society (e.g., Crumley’s 1995 conceptual distinction between scalar hierarchy and control hierarchy). Power may be proclaimed, manipulated, exchanged, and annulled at special-purpose, nondomestic sites (e.g., Cahuachi in the ancient Nasca world: see Silverman 1993a; the Inca Empire’s administrative centers: see Morris 1972). One also might consider Blanton’s (1978) concept of the disembedded capital as a limitation on settlement pattern hierarchies. Blanton argues that a site’s political and decision-making activities may be spatially separate from those sites having the rest of the range of other functions in the complex society (but see criticism of this concept in Willey 1979).

The Production of Space

Lovell (1998: 13) has stated that the “production of territory is itself embedded in the production and reproduction of knowledge.” It is fascinating to consider how the ancient Nasca (or any other ancient people) generated geographical knowledge without benefit of modern cartography and aerial photography to give them an overview of their place in space. Clearly, the Nasca inherited geographical knowledge from earlier generations since at least some of the valleys of the Río Grande de Nazca drainage were inhabited for hundreds of years before the rise of Nasca civilization, to judge from the Early Horizon sites that have been recorded in Palpa and Ingenio

(see Mejía Xesspe 1976; Silverman 1994a), not to mention the Archaic Period occupation at Cahuachi documented by Isla (1990). Especially in the geomorphologically complex Río Grande de Nazca drainage, where a (thus far) homogeneous Nasca style of pottery circulated widely, it is interesting to consider the routes by which the fractured landscape was traversed and the places that gave it form and meaning.

Common sense about this desert region suggests that water was the primary orienting fulcrum of the Nasca. It is reasonable to assume that Nasca cognition of the perceptual environment was expressed linguistically (see Levinson 1996) through oppositional concepts of observable and experiential phenomena, many of which were water-based: upstream/upper valley–downstream/lower valley; surface water–subsurface water; irrigated fertile valley–nonirrigated barren desert; coast–highland; wet season/flood time–dry season/no surface water; and so on. In addition, the Nasca must have conceptualized and verbalized intervening foothills, earth–sky–underworld, “clockwise”–“counterclockwise,” close–far, center–periphery, and directionality, to name just the most obvious.³ Nasca people’s cognitive maps and spatial cognition would have expressed these cultural realities.⁴

Today, there is widespread agreement among scholars of various academic disciplines—anthropology, architecture, landscape architecture, geography, philosophy, sociology, urban planning—that space is produced, lived, and manipulated; it is highly subjective, not a neutral, inert essence or container. The space of which I speak is what is also called spatiality or anthropological space. The ancient Nasca, like all human societies, conceptually constructed and pragmatically vivified space by human action: movement, ritual, actual building activities, territorial definition, stories, economic organization, exchange patterns—again, to name just the most obvious.

The social space thus produced may be understood as the position occupied by an individual in a particular social field, bolstered and expressed by the symbolic capital or prestige of the individual (Bourdieu 1990). Thus, space is relational (de Certeau 1984: 116). “Space occurs as the effect produced by the operations that orient it, situate it, temporalize it, and make it function in a polyvalent unity of conflictual programs or contractual proximities . . . space is a practiced place” (de Certeau 1984: 117). Space is produced by the actions of historical subjects (de Certeau 1984: 118; see also Lefebvre 1991).

The social construction of space occurs at widely varying scales of interpersonal engagement and analytically recoverable comprehensiveness. At present, it is

difficult for archaeologists to recognize the microscale aspects of the Nasca people's social construction of space for want of sufficient household archaeology. Studies of stylistic variability (e.g., Hill and Gunn 1977; Donnan and McClelland 1999) offer hope that we may one day see certain Nasca individuals, and, through technological studies and extremely sensitive field techniques, perhaps we will perceive their social construction of space. Nevertheless, it is important to recognize that because Nasca was a complex society, Nasca individuals and households had multiple and overlapping social fields. We may recognize some of these archaeologically, but not all, and we may correctly or incorrectly privilege some over others because of the nature of preservation and visibility in the archaeological record.

It is possible, with the current state of knowledge, to talk about the macroscale of Nasca construction of space, again recognizing that there were more multiple and overlapping social fields at this greater scale and that this reality implicates "geographies . . . messy geographies—and they have to be not just perceived but theorised and even represented as such" (Thrift 1989: 263, cited in Watts 1992: 118). This macroscale, at present, encompasses large sections of particular valleys, whole valleys, and what I hypothesize as the entire Nasca people or ethnic group resident in the Río Grande de Nazca drainage. Within this rubric I think we can incipiently reconstruct several of the landscapes that the Nasca themselves constructed—social, political, economic, religious—all cognitively inseparable to them and effectively interacting. As Lovell (1998: 14) has said, "Landscape is socialised into place through practical and experiential interaction."

The Nasca *social* landscape ranged from geographically proximal kin to other Nasca people defined as outsiders with whom battles were conducted and from whom trophy heads were taken, possibly as the ritual expression of cosmological beliefs about the interrelatedness of death and fertility (see, e.g., Browne, Silverman, and García 1993; Silverman 1993a: chap. 15). Social and economic ties probably worked together to facilitate contact and exchange with non-Nasca people living in Pisco to the north and Acari and other valleys to the south.

The *economic* landscape was organized around village-based agriculture and the larger distances that also encompassed the quotidian and prestige aspects of the economy. Thus the Nasca world extended from the ocean source of particular fish and shellfish (as well as the omnipotent Mythical Killer Whale) to the highlands, from which coveted obsidian was obtained, to the lomas,

where the Nasca pastured their own camelids, and to distant trading partners, from whom *Spondylus* shell, tropical forest wood, monkeys, and exotic colored bird feathers were obtained.

The early Nasca *sacred* landscape was dominated by Cahuachi. Other architecturally constructed ceremonial centers existed in various of the other valleys of the Río Grande de Nazca drainage. This landscape also included huacas, about which I spoke above. The geoglyphs also integrated the various Nasca religious, political, social, and other landscapes through their multiple functions and meanings.

In reconstructing these emically meaningful landscapes we are aided by recognition of Nasca's root paradigms (Ortner 1973; Turner 1974) or multiscale patterning: the patterns that are repeated at multiple scale in a society are those that employ symbols that are important in a culture. For instance, clearly the profusion of geoglyphs, particularly the lineal ones, is an indication of their tremendous importance in Nasca society. These codified symbols, repeated at multiple scales throughout the Nazca drainage, indicate that which was most important in Nasca society. If we can identify other repeating patterns, we will achieve greater insight into Nasca cognition.

Spatial organization (actually, spatiotemporal) is the key component of that cognition and is the basis of social life. Without spatial organization, all is chaos. We can see many aspects of Nasca spatial organization on the landscape in the sites recognized whose analysis suggests their interrelationships. But it is important to realize that as archaeologists we cannot adequately interpret Nasca social space for want of the stories, songs, discourses, and other ephemeral conversations that were conducted and negotiated about it, even if we recognize that particular iconographic ensembles may well hold the key to such interpretations. Thus, if we think in terms of Harvey's (1989: 220–221) famous grid of spatial practices, as archaeologists of the ancient Nasca we can deal quite well with their material spatial practices and make a reasonably data-based reconstruction of aspects of their representation of space (especially if we use ethnohistory and ethnographic analogy), but we cannot treat Nasca peoples' spaces of representation—their imagination—without wandering into the realm of imagination ourselves.

Place and the Practice of Archaeology

Nasca society's social construction of space and the spatial construction of Nasca society also implicate place,

the two concepts being inextricably linked in theory and practice. Place has a very long history of analysis and debate among philosophers from Plato to the present day (see, especially, Casey 1997), probably because it is polysemous. Place is physical in the sense of topographic and geomorphological space: the position or area occupied by a physical object. It is a tangible, specific location that exists in reference to other locations. It is phenomenological as the focus of human intentions. Place may be ephemeral, with few possibilities for archaeological recovery (e.g., Woodstock as “a happening,” a pilgrimage, a parade), or place may structure the landscape in tangible and recoverable form (e.g., Chavín de Huántar, the Vatican) and be permanently marked (e.g., a roadside chapel at which one leaves offerings).

Place is a position from which to apprehend space. Like space, it has temporal and spatial aspects. Places are settings for particular behaviors and activities. They “nest in landscape according to viewer intentions . . . [each] individual defines a different set of relevant places based on anticipated behavior . . . [they] nest in space variously defined at different scales of comprehension” (Jakle 1987: 26). Places have experiential cues that teach the participant-observer how to act and what to expect by the visual cues inherent in the place, by its appearance and structure (see Conniff 1995). Places may attend the individual, the community, and/or the supracommunity. The meaning of a place must necessarily shift with behavioral intent (Jakle 1987: 7). From this it follows that “places never conform to tidy hierarchies of classification. They all overlap and interpenetrate one another and are wide open to a variety of interpretation” (Donat 1967: 9). Thus place is labile, potentially multivocal, and heterarchical. These differing realities create a series of potentially irresolvable problems for archaeologists seeking pat truths.

Place may also be understood as site. By this I mean several things. Turner (1974: 102) has argued that “processual units, even the least of them, leave symbolic deposits in social time . . . and . . . in actual historical time.” Similarly, by application to the topic at hand, Foucault (1973) speaks about the configuration and localization of knowledge and how the relics of a previous discourse are superseded by the new discourse of site, understood as an exact location. Thus we see the potentially accumulative and historical quality of place.

Place is a concept much more amenable to the search for ancient meaning than is site because the archaeological definition of site is so materially and functionally bounded. Thus, while Willey (1953: 6) conceived of the

site as a unit or category of prehistoric activity and as a unit of space and structure with meaning for the inhabitant or visitor, he was pessimistic about archaeology’s ability to “approximate what was once meaningful.” Furthermore, Willey’s interest in ancient cognition was restricted to architecturally defined places and their function within a group boundary. But I argue, following Conniff (1995), that meanings become attached to places as experience shows that these places meet expectations. Once learned, the place becomes a template for future action.

I have found architect Carol J. Burns particularly insightful in this regard. She is concerned with the specificity of a given place, acknowledging that there is a relationship between cultural production and the local circumstances of material practice and that the site cannot be divorced from other times and the forces that affect its present form (Burns 1991: 148, 149). She is keenly aware of the superimposed layers of the landscape and the challenges they pose for construction (buildings and conception). Thus Burns criticizes the distinction typically drawn by architects between the cleared site and the constructed site as the potential loci of new physical construction. She (Burns 1991: 149) argues that a site (i.e., a locus for construction) cannot be received and perceived as “unoccupied, lacking any prior construction and empty of content . . . space [is not] objective and pure, a neutral mathematical object. This assumed neutrality fosters the impression that the land and the space of a site are independent of political motive.” And Heidegger (1997: 105, emphasis in original), decades earlier, had sensitively observed that “only something *that is itself a location* can make space for a site.”

Physical clearing (i.e., razing) or ideological clearing (acting as if there were nothing there) of a building site “attempts to conquer a territory completely in a single effort, precluding change, development, and all future planning. In aiming to determine definitively the life of the place, the cleared site strategy undertakes to isolate architecture from time. The past is denied and the future is deemed powerless to change the situation, much less improve it” (Burns 1991: 152). I am fascinated—indeed, overwhelmed—by Burns’s apprehension. As Andeanists we have only to think of imperial Inca building policy at Huánuco Pampa, where a truly cleared site was received and a landscape of power was constructed (see, especially, Morris 1972).

Burns (1991: 155) says, “A site, as a result of human action, is always already conceptually and physically constructed prior to building architecture—which is to say,

preoccupied by the way it is known and by its history . . . The site as received is never cleared or empty; indeed, it is not possible for the architect to clear the site of its own constituent formal content.” Similarly to Burns, Gae Aulenti (1997: 17), the great Milanese architect, has spoken of architecture’s “prophetic capacity.” Aulenti deals with the sites Burns calls “cleared” and “constructed” and with the cultural tradition of the site. She is concerned with time and duration and with cultural memory as these affect the site.

These architects are writing about contemporary Western society, yet their studies are relevant to the pre-columbian past. In this book I am tremendously concerned with palimpsests—with the physical, social, political, and ideological challenges presented by the reception among those living in a later time of an obtrusive and potentially meaning-encumbered landscape that has persistent features from an earlier time. What are the necessary physical and ideological alterations made by the later people who intend to live and build on that landscape in order to appropriate, habilitate, transform, or destroy existing landscapes? (See, especially, Bradley 1993.)

Landscapes have life cycles, life histories, and evolutionary trajectories. The meanings ascribed to landscapes are today and were in the past contestable; they may rely on memories of collective identification (see Lovell 1998: 16). For the Nasca, the previously occupied landscape—particularly that which was *physically* structured by previous social groups—implicated archaeologically pre-Nasca people as well as Nasca people who had lived one and many generations before. The offerings left at post-apogee Cahuachi and the ritual entombment of the Room of the Posts (Silverman 1993a) and the superimposed geoglyphs (Silverman 1990b) are all examples of conscious, actor-generated responses to a perceived problem of memory and meaning, a problem of visible, obsolete, and possibly vital or threateningly competitive ideas and places.

I also use “place” in the sense of landmark. Culturally significant places on the landscape are landmarks. The landmark is what its two morphemes say it is: a mark on the land. Landmarks, whether naturally occurring or human-built, are physical and visible and serve as constant reminders of how we do things (they have historical precedence) and where we do those things. They are our memory—places that store and record knowledge and activate human behavior. They are like networks of cerebral synapses, creating the cultural equivalent of neurological pathways, what society would call tradition

(mediated, of course, by practice: tradition establishes parameters for behavior but does not dictate action; see below). And like synapses, they open, shut, and delay flows of information.

But landmarks are significant only for those who have imbued them with meaning, and their meaning (and ownership) may be contested. Though observable by all, they will be unremarked if not part of the cultural circuitry. We orientate ourselves in physical and social space with reference to places or to landmarks. Landmarks are what enable us to navigate our way around a landscape because they foreground contextually important information from amid a noisy (occupied, built up, marked, etc.) background. Different landmarks will be salient in accordance with the landscape called into action by situation. Communal and pancommunal situations such as pilgrimage to Cahuachi will probably foreground an established sequence of landmarks with widely shared meaning, much as Turner and Turner (1978: 23) recognize for the way stations of Christian pilgrimage. These landmarks promote *group* identity. I think archaeologists are probably incapable of recognizing ancient landmarks of *personal* signification.

Furthermore, archaeologists cannot recognize all places on the landscape, although we possibly can identify all extant visible sites (in the strict sense of a physical space with evidence of past human activity). Thus our site distribution maps do not impart the ethnographic-quality knowledge we do not have: the practice of everyday life and the many different networks to which individuals belonged at different and crosscutting scales of inclusion. At best, with sufficient excavation, we may begin to have a sense of some of the richness of the human life people led.

Similar to landmarks, artifacts structure interaction, evoke experiences, and have historical memory. The quintessential anthropological example of this is the kula ring. It is important, then, to view artifacts in geographical space—spatially contextualized on many levels—rather than abstractly dimensionless. Artifacts determine how we understand our cultural tasks. They are mnemonic devices, symbolic representations of information that also enable information to be passed on.

As in all societies, the Nasca must have created their sense of identity around a collective memory (i.e., Halbwachs 1980), aided by language and oral narratives (not recoverable in the archaeological record) and place references (some of which are recognizable in the archaeological record), in addition to specific cultural practices and material markers of that identity (for Nasca, e.g.,

cranial deformation, the taking of trophy heads, the iconography of the pottery style). Without essentializing and atemporalizing “Andean people,” it is, nevertheless, significant that Platt’s (1986) study of contemporary Macha social organization and Salomon’s (1991) deconstruction of the Huarochiri Manuscript show that spatial divisions, ecological categories, marriage patterns, deities, and social geography are tightly linked in Andean cognition and practice; other examples could be cited. But, as archaeologists, I believe it is impossible for us to access the ancient Nasca people’s sense of place, even though ethnography proves that all societies have one (see, e.g., Feld and Basso 1996; Stefanovic 1998). Therefore, we cannot securely address the related issue of locality production, for, as defined by Appadurai (1996: 178), locality is “primarily relational and contextual rather than . . . scalar or spatial . . . it [is] a complex phenomenological quality, constituted by a series of links between the sense of social immediacy, the technologies of interactivity, and the relativity of contexts. This phenomenological quality . . . expresses itself in certain kinds of agency, sociality and reproducibility” (see also Lovell 1998).

At most, an archaeologist can suggest, based on ethnographic analogy, that a place such as Cahuachi must have anchored the ancient Nasca people “in place,” that they must have had a keen sense of place about Cahuachi, with its water, stunning desert backdrop, geographical centrality (if they perceived a drainage), and physical and ideological relationship to the Pampa.

Ritual emplaces. I speculate that Nasca ritual acts, such as clearing a hill summit or taking a head or making a geoglyph, produced locality. Although we are most accustomed to considering locality as an issue in postmodern societies with multiple and multiply socialized and competing ethnic groups and minorities, ethnography strongly suggests the relevance of the concept to ancient societies.

Smith’s (1987) phrase and eponymous book title, “to take place,” is rich in meaning for this discussion. Human action takes place (happens) in place (location and space) and thus takes place (creates place, creates space). Concomitantly, place takes us: it and its spatiality construct and constrain our actions as much as our actions reciprocally create and animate. An understanding of the dynamism and recursivity of spatial life requires and benefits from an analytical approach that is based in practice, agency, and structuration. It is a perspective that is radically different from traditional spatial analyses in archaeology (see, e.g., Clarke 1977; Hodder 1978; Hodder and Orton 1976; Jarman 1972; Rossignol and Wand-

snider 1992), without whose data, nevertheless, ethnographic interpretations of the past cannot be empirically sustained.

The ethnography of Andean peoples’ social construction of space (e.g., Bastien 1978; Bouysse-Cassagne 1986; Platt 1986) and ethnohistorical documents such as the rightly famous Huarochiri Manuscript (Salomon and Urioste 1991) are valuable models of how at least some Andean people have behaved. Most Andeanists believe there is a core cultural system that recurs in resplendent variation over time and space and that cross-cultural and cross-temporal comparison is a valid methodological stance. Major challenges face those scholars working with prehispanic Andean societies. The ancient people did not leave written documents, though to some degree ancient material culture and built environment can be read as texts. The theoretical, methodological, and ethnographic perspectives I raise here deserve the attention of archaeologists. They can enrich our approach to the past and our interpretations of it. With a sufficiently rich database it is possible to make informed speculations that are plausible with the Andean realities we know—and have constructed.

Our Maps, Their Maps

Fish (1999: 203) has observed insightfully that settlement patterns “serve as powerful mnemonic devices by which archaeologists recount the stories of past societies.” It is crucial for archaeologists to accept the validity of Fish’s statement. We are telling stories. Based on our individual theoretical orientations and other academic factors, researchers will not tell the same story, even with the same cast of actors (the sites) and even when, optimally, these are similarly recognized and similarly dated by different scholars. Our settlement pattern studies are only a vehicle for dealing with large bodies of data in an efficient and comprehensible manner. As Fish (1999: 204) acutely observes, ultimately our settlement pattern research ends up as dots on maps, “mnemonic devices that guide authors in relating their archaeological tales.”

The graphic representation of the ancient Nasca landscape is as difficult as its reconstruction. I have often found myself annoyed with the topographic maps of Peru’s Instituto Geográfico Nacional. “Why can’t they get the rivers’ names right? Why do they put several different names on a single river? It’s the Ingenio River, don’t they see?” I have muttered to myself as I see the river changing names west to east along its length: Río El Changuillo, Río El Ingenio, Quebrada Ingenio, Río de Otoa. My cog-

nition of what a river valley should look like on paper is not theirs.

I see a tremendous lost opportunity during my fieldwork. The names of the rivers, as well as all other toponyms, were collected by state topographers from local informants. I, too, should have collected local names as local lore for places. The name changes along the course of the Ingenio River may be and, especially, *may have been* significant. Riverine toponymy can conceivably yield valuable insight into premodern landscape cognition and land use.

The maps we consult must be viewed as valuable palimpsests and representations—with attendant problems. Foucault (1980: 74) argued that all territorial concepts imply the exercise of power. He challenged social scientists to investigate “how inquiry as a model, a fiscal, administrative, political schema, came to serve as a matrix for the great surveys which are made at the end of the 18th century where people travel the world gathering information. They don’t collect their data raw: literally, they inquire, in terms of schemas which are more or less clear or conscious for them.” Clearly, this was the process at work in the Spanish Colonial institution of *visitas*. It was also energetically applied to India by the British. In his brilliant study of the intersection of imperialism and cartography in India, Edney (1997: 1) fulfills Foucault’s challenge, eloquently proving that “knowledge of the territory is determined by geographic representations and most especially by the map.” Harley (1988), too, has shown that maps should be read as thick texts or socially constructed forms of knowledge; they are value-laden images.

Just as the delimitation of a survey area is a decision rife with cultural biases, so, too, is the graphic representation of survey data; the two are inextricably related. By showing the geographical distribution of Nasca artifacts—as consciously defined by my beliefs about style and the sociopolitical behavior embedded within it—in time and space, I, as analyst-interpreter, create a Nasca world that may or may not have existed. By presenting detailed distribution maps of settlements in a single valley, I convey the impression that the valley is a meaningful unit of time-space. But for whom? Indeed, the technology and knowledge with which archaeologists make their maps “are not neutral and unproblematic phenomena,” to apply Edney (1997: 31) to the specific case at hand. Just as the British imposed European science, rationality, and concepts of space on the already inhabited Indian landscape and, in so doing, consciously distinguished themselves from the Indians, whose views were rejected (Edney 1997: 32), so, too, archaeologists impose a U.S. ac-

ademic framework on an equally divergent and diverse landscape. It is one whose ancient and evolving meaning and practice are difficult to reconstruct for want of the analogously abundant documentation available to Edney in his geohistorical study. How can a cognitively and cosmologically non-Western settlement pattern and society be represented or captured in Western cartographic, tabular, and classificatory terms?

Archaeologists have a “cartographic culture” by which we explore and represent the extinct world. In bringing that Western cartographic culture to the past we, too, seek to impose and replicate our own social order on a different one (see Edney 1997: 36). Wood (1992: vii–viii) is cognizant of “the power of maps” and enunciates a series of supporting propositions to that effect: “maps work by serving interests . . . maps are embedded in a history they help construct . . . every map shows this—but not that . . . the interest the map serves is masked [through] the naturalization of the cultural [and] the culturalization of the natural . . . the interest is embodied in the map in signs and myths . . . each sign has a history.”

Mapmaking’s translation from the field to the lab is culture-bound and entwined. “The technologies of surveying, which is to say the technologies of observation and measurement, are part and parcel of the graphic representational practices of the map . . . Removing and disassembling the barriers between technique and intellect and between data and its representation [lead] to a far more nuanced perspective” (Edney 1997: 339–340).

It is important to recognize that our archaeological distribution maps are heuristic devices only and that, as well intentioned as we are, our maps and all maps “embody their authors’ prejudices, biases, partialities, art, curiosity, elegance, focus, care, attention, intelligence, and scholarship” (Wood 1992: 23). Archaeologists’ maps subordinate a lost ancient view of the landscape to our own cultural construction of space and academic needs every bit as much as the British mapping of India created a knowable and manageable entity. The world around me and the world I know from ethnography and ethnohistory indicate the existence of a whole, other, imbricated realm of maps that I will never be able to draw—the multiple, overlapping, and exclusionary cognitive maps that Nasca individuals and groups had of their own social, political, cultural, religious, and economic worlds as experienced and animated through practice and networks, through landmarks and ceremonies, through trade and exchange, through war and drought, and so on.

Notes

1. Actually, the Nazca River does not have headwaters. Rather, the discrete Aja and Tierras Blancas rivers have their own headwaters and unite well downstream at 600 meters above sea level to form the Nazca River.

2. Furthermore, Kroeber appears to conflate style and time, taking what we know to be temporal differences as proof of the diversity attributed to Nazca's Nasca.

3. The dual oppositions I have noted are so universal they need not provoke discussion of Andean duality here.

4. A cognitive map is produced by a process "composed of a series of psychological transformations by which an individual acquires, stores, recalls and decodes information about the relative locations and attributes of the phenomena in his [or her]

everyday spatial environment" (Downs and Stea 1973: 7). Spatial cognition can be defined as "the knowledge and internal or cognitive representation of the structure, entities and relations of space; in other words, the internalized reflection and reconstruction of space and thought" (Hart and Moore 1973: 248). Spatial cognition is an aspect of environmental cognition defined as "the awareness, impressions, information, images and beliefs that people have about environments . . . It implies not only that individuals and groups have information and images about the existence of these environments and of their constituent elements, but also that they have impressions about their character, function, dynamics, and structural inter-relatedness, and that they imbue them with meanings, significance and mythical-symbolic properties" (Moore and Golledge 1976: xii).

Environmental Paradoxes in the Río Grande de Nazca Drainage

Geographic and climatological extremes characterize the Central Andes. The coast of Peru is one of the world's driest deserts, yet it has extraordinarily high humidity throughout most of the year. The slopes of highland valleys ascend beyond the limits of agriculture to form a vast altiplano (high tableland). The intensely varying ecological niches are so tightly stacked that in a short horizontal distance a tremendous vertical distance is covered, that is, the valleys rise steeply from seashore to headwaters. Rainfall is usually restricted to the mountains and then only in Peruvian summer (December–March); it is these rains that charge the rivers descending to the coast and make sedentary agricultural life possible.

Scholars have frequently remarked on the emergence of pristine civilization in an environment as harsh and seemingly inhospitable as that characterizing the Central Andes. Carneiro (1970) was particularly struck by the severely circumscribed valleys of Peru's desert coast. He argued that this physical setting, among other factors, actually could have promoted the rise of complex societies by forcing increasingly large populations to figure out social solutions (including warfare) to their population size and density.

Clearly, we cannot understand Nasca or any other ancient society without fully appreciating the physical environment in which people lived. Let's look, therefore, at ecology, geography, and climate as these likely existed in Nasca times.

The Colonial View

The Spanish soldier and chronicler Cieza de León observed Peru between 1548 and 1550, soon after Pizarro's conquest of the Incas. Cieza de León was witness to an Andean world in the process of severe cultural, political, social, economic, religious, biological, and physical disruption and trauma yet still operating largely in indigenous terms. He was a keen observer of people, places, and nature and had a profound interest in Peru. His statements about the south coast are the closest we will ever come to knowing about the precolumbian appearance of these valleys.

One walks toward the beautiful valleys and rivers of Nasca. In past times these were well populated, and

the rivers irrigated the valleys' fields in a well-ordered manner. . . . In the principal of these Nasca valleys (that is also known as Caxamalca) there were great buildings with lots of storerooms, commissioned by the Incas . . . From the burial places and huacas I've heard that the Spaniards removed a quantity of treasure. And because these valleys are so fertile, as I've said, a great quantity of sugarcane has been planted in them and other fruit that is taken to sell in the cities of this realm. The great and beautiful Inca highway passes through all these valleys, and in some parts of the desert sands one can see signposts that show the route one should follow. (Cieza de León 1973: 185)

Writing almost seven decades after Cieza de León, Felipe Guaman Poma de Ayala (1980: 983, numbered illustration 1043) depicted the Spanish town of Nazca in a setting of vineyards and stated that Nazca produced the best wine in the realm, comparable to that of Spain. Guaman Poma said that Nazca had "abundancia y poca agua," both abundance and scarcity of water.

The Contemporary Appreciation

Modern scholars have taken a much less idyllic view of the region. Kosok (1965: 51) aptly described the Río Grande de Nazca system as composed of "minute, isolated valleys that lie scattered over one of the world's driest deserts." The rivers that supported life in this desert are charged only by varyingly intense summer highland rainfall. Kosok (1965: 58–59) argued that the scarcity of arable land and water in the drainage could have played a limiting role in the development of complex society there. "In the small valleys of the Río Grande no great wealth could accumulate; thus no large constructions could be undertaken. At best, a few small adobe mounds could be erected. Consequently, conditions never arose whereby a secular state could appear—except at rare intervals and then probably only as an outside intrusion. And the Nazca area was too poor to attract any but the temporary interest of passing conquerors . . . [there was a] retention of the religious ceremonial emphasis among the poorer Nazcans."

ONERN (1971: 2) characterizes all of the Río Grande de Nazca drainage beneath 2,000 meters above sea level as one major ecological type, "premountain desert formation" or "subtropical desiccated desert." However, the Nasca people occupied or exploited smaller units of ecological significance within ONERN's gross category.

One of the ecological niches occupied by the Nasca is

the yunga: the narrow, sunny, dry, and hot quebradas (ravines, washes, gulleys) above the valley necks. It is a "natural region" between coast and highlands, between about 600 and 2,000 meters above sea level, that is characterized by a rapid ecological transition up toward the highlands (Pulgar Vidal 1996: 61–78). Temperature averages 21.3°C; there is significant diurnal and seasonal variation (ONERN 1971: 2).

The Nasca people also occupied an ecological zone called the chala. This is the coast or the premountain zone that occurs below the valley neck (usually at 500–600 meters above sea level) and extends to the river mouths (Pulgar Vidal 1996: 33–59). Chala is characterized by a desert marine environment with high humidity, particularly in the winter.

The littoral ecological zone corresponds to the mouths of the rivers and surrounding beachline areas. Nasca littoral settlements are unreported (see Carmichael 1991: 21; Engel 1981). However, actual and iconographically depicted marine remains indicate significant Nasca interest in the sea.

The precolumbian inhabitants of the Río Grande de Nazca drainage also could have taken advantage of the lomas (winter fog meadows). There are pockets of lomas in the upper Ingenio Valley, several kilometers up the major quebradas perpendicular to the river at an altitude of about 1,000 meters above sea level; I have not surveyed up these quebradas. Lomas are also present in the relatively nearby areas of San Fernando Bay, San Juan Bay, and San Nicolás Bay (see Strong 1957: fig. 1). In the past, lomas would have been valuable as deer and camelid pasturelands in addition to the edible wild foods that grow there. The scenes of camelid hunting painted on Nasca pottery (e.g., Eisleb 1977: fig. 207; Kroeber and Collier 1998: figs. 259, 272) may refer to real events that happened in the lomas and/or in a puna such as Pampa Galeras, which is located above Tierras Blancas in Lucanas Province between Tambo Quemado and Puquio at more than 4,000 meters above sea level.

Kosok (1965: 50) observed aptly that the Nazca region "is not strictly coastal. It is even less Sierra. Indeed, its character includes elements of both." He described Nazca as a "peculiar transition zone," pointing out that the Río Grande de Nazca drainage "forms the beginning of an increasingly elevated series of intensively cultivated branch valleys of the western semi-Sierra region which extends southeast towards Arequipa" (Kosok 1965: 50). He also noted that the Nazca region "has always been the natural southern coastal entrance into the southern Sierras proper—connecting this section of the Coast with Ayacucho, Abancay, Cuzco and even Lake Titicaca"

(Kosok 1965: 50). The veracity of Kosok's assertion may be seen in similarities between Pucara and Nasca 1 pottery (Rowe 1971) and the presence of Nasca pottery high up the drainage's tributaries.

The Water Regime

The Río Grande de Nazca drainage system is exceptional on the Peruvian coast because it is formed of many affluents (principally, Santa Cruz, Grande, Palpa, Vizcas, Ingenio, Aja, Tierras Blancas, Nazca, Taruga, Las Trancas) with only one outlet to the sea, the Grande River itself (fig. 1.1). The multitributary situation of the drainage exists because uplift in geological times blocked the affluents' access to the sea. The Grande River is interesting because it does not have the wide delta with rich alluvial deposits that is typical of most of the other river valleys of the Peruvian coast. Rather, the river emerges as a trickle from its narrow canyon.

There also is a series of small, narrow quebradas (Atarco, Carrizal, and Usaca) in the southern drainage that drain into the Nazca River. They have surface water only intermittently. ONERN (1971: 181) considers the Grande, Ingenio, Palpa, Vizcas, and Nazca Rivers to be the only real rivers of the Río Grande de Nazca system; the others, it says, have such scarce water (see CD: table 2.1) and their water regime is so variable that there can be long droughts during which absolutely no agriculture can be practiced. The Río Grande de Nazca drainage encompasses some 10,750 square kilometers (ONERN 1971: 2), of which only 12,920 hectares of precarious agriculture were being maintained in recent years (ONERN 1971: 181).

The Grande River proper and the northernmost tributaries (Santa Cruz, Palpa, and Vizcas) essentially trend from north in the highlands to the south, while Ingenio and the southern tributaries flow generally from east in the highlands to the west. The river valleys are separated from each other by narrow mountain ranges or desert stretches. Because each of the constituent rivers of the Río Grande de Nazca drainage has its headwaters in a different part of the adjacent highlands, the rivers usually do not charge at the same time during the summer rains. Just as in the present, in the past a northern valley in the drainage might receive more or less rain-fed irrigation water earlier or later than a valley to the south, and vice versa. Such a predictably unpredictable situation could have fostered intervalley relationships of cooperation as a way of spreading risk; it also could have promoted competition among communities for scarce water resources.

Geologically, the Río Grande de Nazca drainage is composed of Quaternary sedimentary rock formations that are primarily riverine and riverine-alluvial (ONERN 1971: map 2). The soil series is riverine, and the ground is fairly level (ONERN 1971: map 3). Surface soil (0–50 centimeters) is thick in texture (ONERN 1971: map 5). The soils of the drainage vary from appropriate for agriculture without major limitations to lands characterized as apt for irrigation agriculture with moderate to strong limitations (ONERN 1971: maps 3, 5). Agricultural land is substantially removed from the seashore. Most of the earth-rich sediments carried in suspension by the Grande River are deposited in the middle stretch of the Grande Valley between Chiquerillo, at the union of the Grande and Ingenio Rivers, and Cerro Colorado, where the Nazca River enters the Grande (ONERN 1971: 31).¹ Today, this is the best agricultural area of the whole drainage.

In addition to the surface water of rain-fed rivers, ancient Nasca people exploited underground water, particularly in the southern tributaries, by means of a system of subterranean canals and surface leader canals and reservoirs from which fields were irrigated; these are the filtration galleries or aqueducts or pukios of the literature (Mejía Xesspe 1940; Rossel Castro 1977; González García 1978; Schreiber and Lancho Rojas 1995; see the discussion of water regime in Silverman 1993a: 3, 8–11).² The subsurface water regime of the entire drainage is currently the subject of study by a team of geologists from the Department of Geosciences at the University of Massachusetts at Amherst, led by Dr. Stephen Mabee.

Thus, in addition to its multiple tributaries, the Río Grande de Nazca drainage is exceptional because two different water regimes operated, a northern one, which had standard coastal irrigation systems and lacked filtration galleries, and a southern one, whose characteristic scarcity of surface water was resolved in the past through the construction of an ingenious system of underground canals and surface reservoirs. When settlement pattern data from the southern drainage are fully published, it will be possible to compare them to data from the northern drainage to determine if there are any systematic water-related differences in settlement pattern and sociopolitical organization among the valleys.

El Niño, Drought, and Other Natural Catastrophes

The Central Andean region is subject to major climatic perturbations. The El Niño/Southern Oscillation (ENSO) affects Peru as an anomalous displacement of the icy

cold Humboldt Current with warm equatorial waters (Macharé and Ortlieb 1993: 36). The change in water temperature is on the order of 10°C, enough to kill many endemic cold-water fish and mollusk species. On land, El Niño causes unusually high temperatures accompanied by massive rainfall on the normally arid coast itself. There are devastating river floods and hillside huaicos (mud or debris flows).

In addition to recurrent El Niños, the worst of which are called Super Niños or Mega Niños, there are recurrent droughts and frequent large-magnitude earthquakes. Moseley (1997: 25) observes that “Andean disasters occur individually, and sometimes collaterally.” The causality involved in “convergent catastrophes” has not been worked out, but it is not uncommon for a severe El Niño to be preceded by an earthquake (Moseley et al. 1992).

The north coast suffers most during El Niño episodes, with the central coast not far behind. But El Niño events have affected the south coast and far south coast as well. For instance, the most recent El Niño, in 1998, triggered massive flooding and mudslides on the south coast. The Ica River overcharged its banks, depositing a layer of mud across the city of Ica. In the Río Grande de Nazca drainage, water coursed across the Pampa, destroying some of the geoglyphs.

Grodzicki (1990: 85–89, 97) identifies a major ENSO event in Nazca in the first century B.C., according to radiocarbon measurements on samples obtained by Giuseppe Orefici at Cahuachi. Grodzicki describes the event as even greater than the one that struck Peru in 1983 with which he was familiar. This Super Niño could be the same one documented by Elera and Pinilla (1992) for the Salinar occupation at Puémapa on the north coast, and it may be the event mentioned by Macharé and Ortlieb (1993: 46) that would date to somewhere between the late second century B.C. to the early second century A.D. on the basis of a radiocarbon measurement of A.D. 16 ± 163 . Grodzicki (1990: 93) calculates that the event caused 4,200 millimeters of rain to fall within a few days. He argues that climatic perturbations (rainfall causing erosion and huaicos) lasted several decades (and can last up to three hundred years) and that human settlement did not occur at this time. Rather, he says that existing structures were damaged (Grodzicki 1990: 95). However, archaeologically there is no evidence that habitation ceased at this time in any of the valleys of the south coast for which data are available (see, e.g., Silverman 1996; see Canziani 1992 for Chinchá; Peters 1997 and Silverman 1997 for Pisco; Cook 1999, DeLeonardis 1991, Massey 1986, and Menzel, Rowe, and Dawson 1964 for Ica; Silverman 1993b, 1994a, and this volume for Ingenio; Valdez 1998 for

Acari). Following this wet period, desertic conditions typical of the coast are said to have been reestablished.

Orefici (1990: 116) argues that cyclical catastrophic rains and associated huaicos prompted five episodes of total remodeling of Cahuachi’s temples and the rebuilding of other constructions. He interprets the collapse of a monumental wall at Unit 10 as the result of tremendous water pressure inside the building pushing out (Orefici 1990: 116–117). He notes similar occurrences elsewhere at the site and dates these to between the second and fourth centuries A.D., during the apogee of the ceremonial center. I did not recover this evidence in my small-scale excavations at the site and cannot evaluate Orefici’s reconstruction on the basis of the information he provides. Aerial photographs of Cahuachi (see, e.g., Silverman 1993a: figs. 5.1, 5.2) show repeated water flow through the site that damaged walls after the site’s period of maintenance.

The ancient Nasca people appear to have architecturally coped with repetitive episodes of excessive rain with varying degrees of foresight and success. Whereas at Cahuachi concern appears to have been minimal, in Nasca 3 times the inhabitants of Site 99 in the Ingenio Valley constructed a massive thirty-five-meter-long wall of rocks and boulders across the path of a huaico to prevent potential damage to the site from new huaicos (see chapter 7). And at Site 552 (chapter 5), also in the Ingenio Valley, a major wall was reoriented away from its sharp right angle to create a deliberate barrier against common huaicos in the adjacent quebrada. In fact, rock from subsequent huaicos is visible up against the outer side of this wall, so the design was successful.

The hypothesized first century B.C. El Niño would have followed a drought between 400 and 200 B.C., and it would have preceded drought conditions between A.D. 0 and 300. Drought conditions existed again in A.D. 540–560 and A.D. 570–610, the latter causing at least a 20 percent drop in precipitation (see Moseley 1997: 19; Thompson et al. 1985: table 1). Petersen (1980) hypothesized that the demise of Nasca culture was due to the pressure of an advancing desert.

Grodzicki (1990: 97) reconstructs a catastrophic river flood and heavy rains as a result of another El Niño around A.D. 600; Uceda and Canziani (1993) have proposed a similar event at Huaca de la Luna in Moche at the same time, causing the definitive abandonment of that site. Grodzicki says that the event severely damaged adobe constructions at Cahuachi and probably the valley fields, but by this time Cahuachi had ceased to operate as the great early Nasca ceremonial center. After this event, desertic conditions again were established (and see above

about the sixth century A.D. droughts). Grodzicki (1990: 97) proposes another major El Niño event around A.D. 1000 followed by the reinstatement of typical desertic conditions. Another drought occurred ca. A.D. 1100–1450/1500 as reconstructed from studies of Lake Titicaca and the Quelccaya ice cap (see Ortloff and Kolata 1993; Thompson et al. 1985).

Alternating periods of drought, flood, and normal conditions presented opportunities and challenges to the inhabitants of the south coast, just as they did to all Andean peoples (see, e.g., Moore 1991; Moseley 1987, 1992, 1997; Nials et al. 1979 *inter alia*). A strong and, especially, a cataclysmic El Niño will kill off most cold-water fish and mollusks, wash out irrigation canals and fields, flood homes, create famine, and promote disease and infant mortality. And these are only its physical effects. Ideologically and sociologically, natural disasters may account for the collapse of entire civilizations, as has been suggested for the demise of the Naymlap dynasty in Lambayeque (see, e.g., Donnan 1990).

But El Niño is not all bad. Warm-water marine species colonize Peru's coastal water and are edible. The desert and lomas bloom. The algarrobo/huarango forests expand. Opportunistic farming and herding are facilitated in otherwise inhospitable areas. However, these are minor benefits compared to the devastation of a truly massive El Niño. As Moseley (1987: 8) indicates, there is still a decline in the fishery, and the fishery does not compensate the agricultural infrastructure (fields, canals) destroyed by flooding caused by El Niño. Nevertheless, the positive side effects of an El Niño may be just sufficient to permit survival of the populace long enough for the climatic disaster to abate and society to reconstitute itself.

The coastal situation may be mirrored in the highlands. In 1983 El Niño brought excessive rain to the north coast and devastating drought to the south highlands, the latter causing pasturelands to dry up and crops to fail. These conditions prompted large-scale migration of altiplano residents to the valleys of the far south coast. However (and this is very important), Moseley (1987: 8) correctly observes that under these conditions agriculture in the highlands, though “shut down,” is not destroyed, as repeatedly happens on the north coast.

Moseley (1987, 1997) has argued that recurrent major climatic perturbations created a punctuated equilibrium or punctuated change in the development of Andean civilization: “Andean civilization did not arise or mature under a constant climatic regime” (Moseley 1987: 8). Orfeci (1990: 117–118) makes the related observation that Nasca society may have fluctuated between periods of greater and lesser social, economic, and political stability

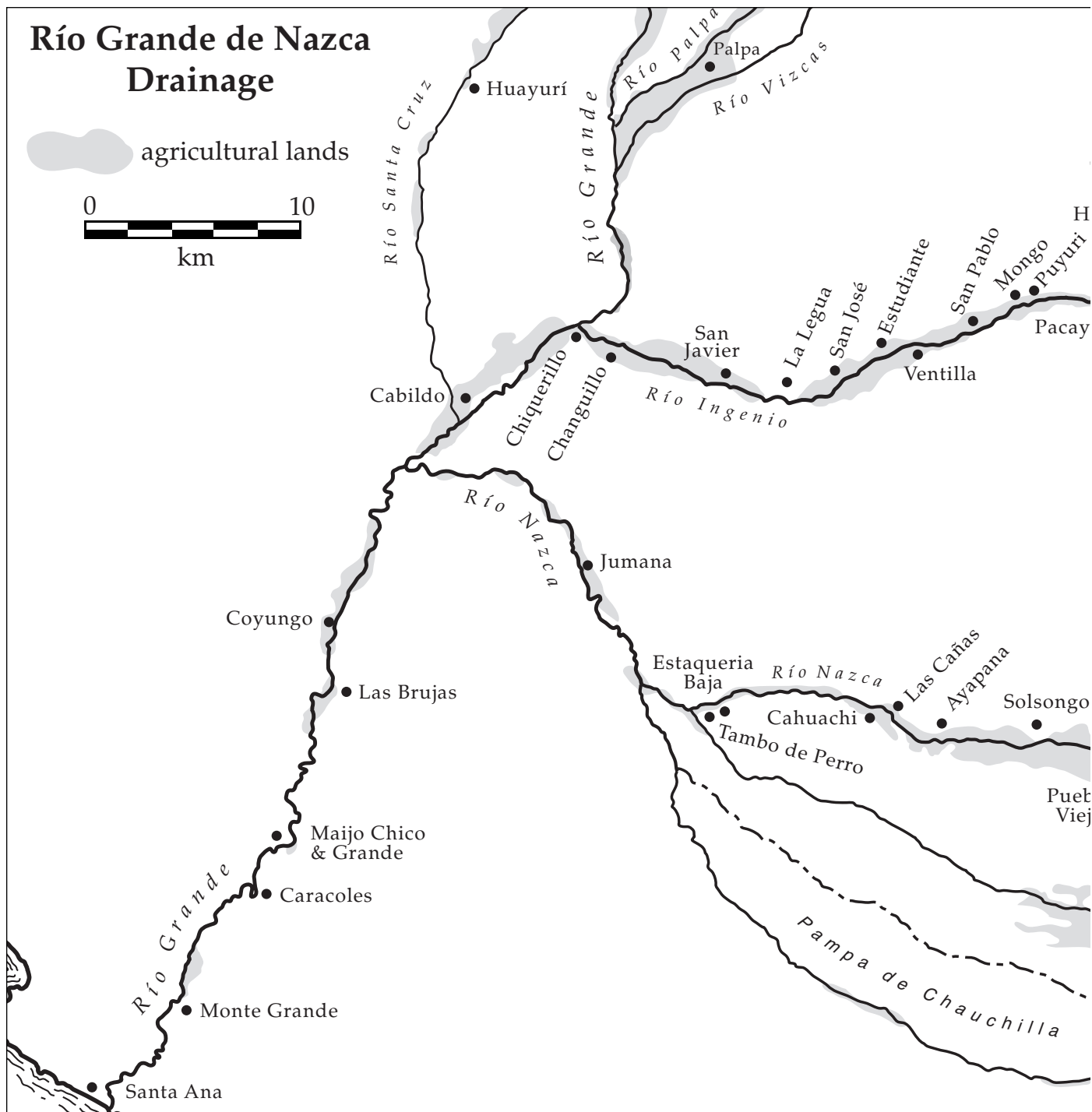
in accordance with the environmental context. Grodzicki (1990) states that the geological history of Nazca over the past two millennia is characterized by intense periods of erosion and accumulation (mudflows, debris flows, river flooding) caused by climatic anomalies that produced strong, momentary rains. However, Macharé and Ortlieb (1993: 41) urge caution with Grodzicki's proposed ENSO reconstructions because the south coast has been so little studied by ENSO experts. They warn that local/localized episodes of unusually heavy rainfall, flooding, and consequential huaicos may be mistaken for major pan-Andean and, indeed, worldwide phenomena. Moseley et al. (1992) issue the same caution. Not every archaeologically documented case of flooding was the result of a severe El Niño. Indeed, Moseley et al. (1992: 209, 212) have observed that terrain-inscribing ENSO events are exceptionally rare in the archaeological record; they document other events that intervene in flood episodes and may complicate their interpretation. Yet even brief and not necessarily heavy episodes of rain in Nazca could have destabilized adobe constructions because of prior accumulated stresses from tectonic activity. These were the conditions within which late Paracas and Nasca society developed.

One independent check of Grodzicki's reconstructions is how settlement patterns evolved. There are major changes in settlement patterns such as the Ocucaje 9 nucleation in Ica and the sharp decrease in late Nasca settlement in Ingenio. How many of these changes—some detailed in later chapters of this book—are due to climate and how many to politics and combinations thereof remains to be unambiguously and independently determined on the south coast. Another independent check is marine remains from the south coast. Rodríguez de Sandweiss (1993: 298) identified all of the molluscan taxa at Cahuachi as native to the cold waters of Peru, including the section of coast closest to Cahuachi; the only exception was *Spondylus*, which is known to have been an object of long-distance trade and exchange.

The Ingenio Valley and Middle Grande Valley

Geography

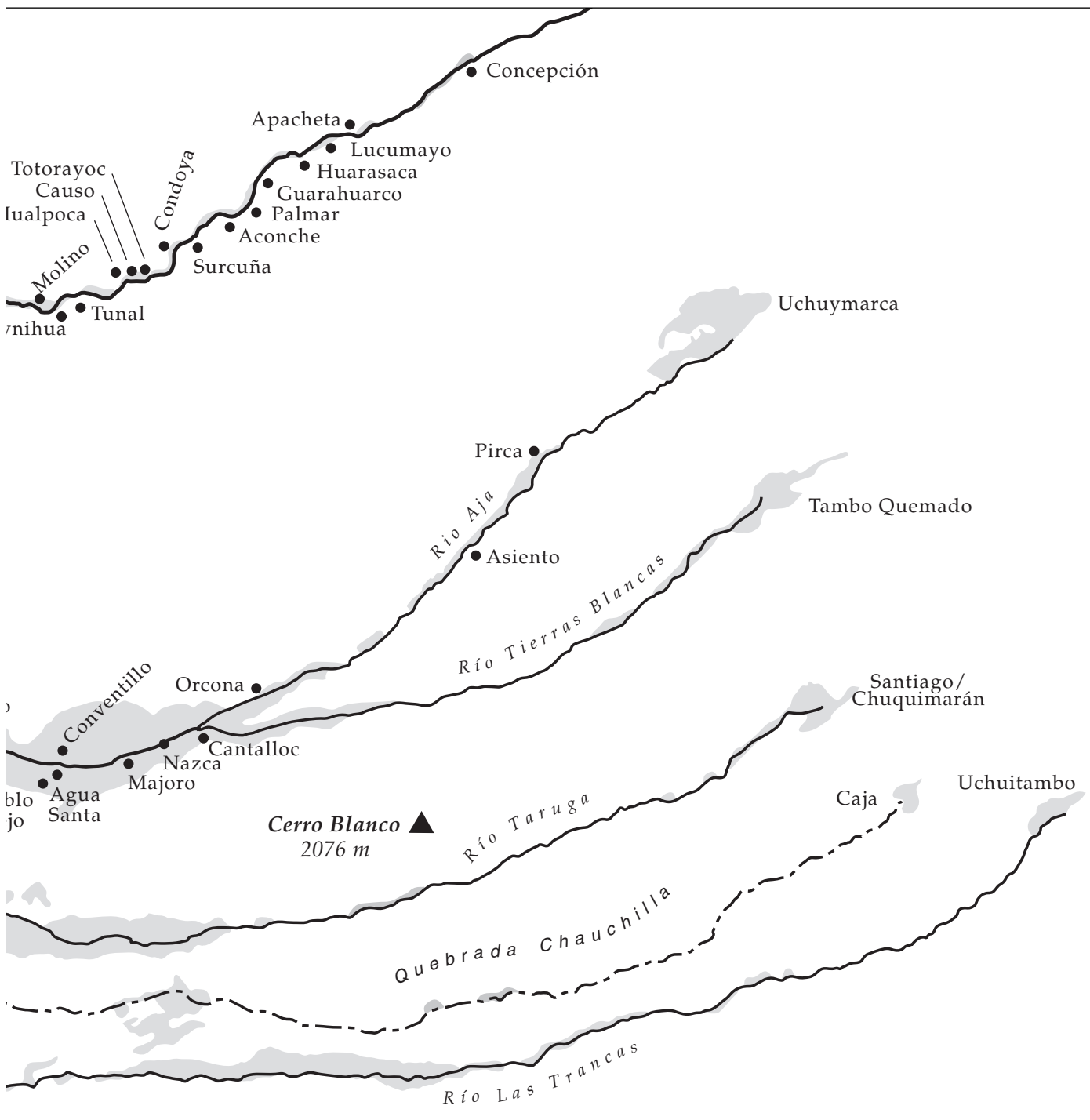
The Ingenio River runs for some 90 kilometers east-west between its headwaters at more than 4,000 meters above sea level and its union with the Grande River at Chiquerillo at 225 meters above sea level (figs. 2.1, 2.2). In the upper valley the river meanders through its narrow canyon, at times hugging one side of the valley, at times the other, and sometimes passing through the middle of the



2.1. Location of principal modern settlements in the Ingenio, middle Grande, and Nazca Valleys.

valley floor or dividing it into unequal north and south bank tracts of land. Each bend creates a tract of fertile valley bottomland. The gorge created by the river repetitively constricts at each bend. From the top of the valley looking down, the gorge carved by the Ingenio River widens gradually. The north side of the valley is freed of its steep canyon by Quebrada La Ayapana. On the south

side the hills recede significantly between Cerro Papagallo and Cerro San Pablo, on whose south side is Quebrada El Fraile. Nevertheless, hills are close enough to the valley floor to offer excellent locations for habitation sites. At La Legua the valley constricts in a dramatic narrow one-kilometer-long serpentine, the angostura (fig. 2.3), within which one can practically touch both sides of



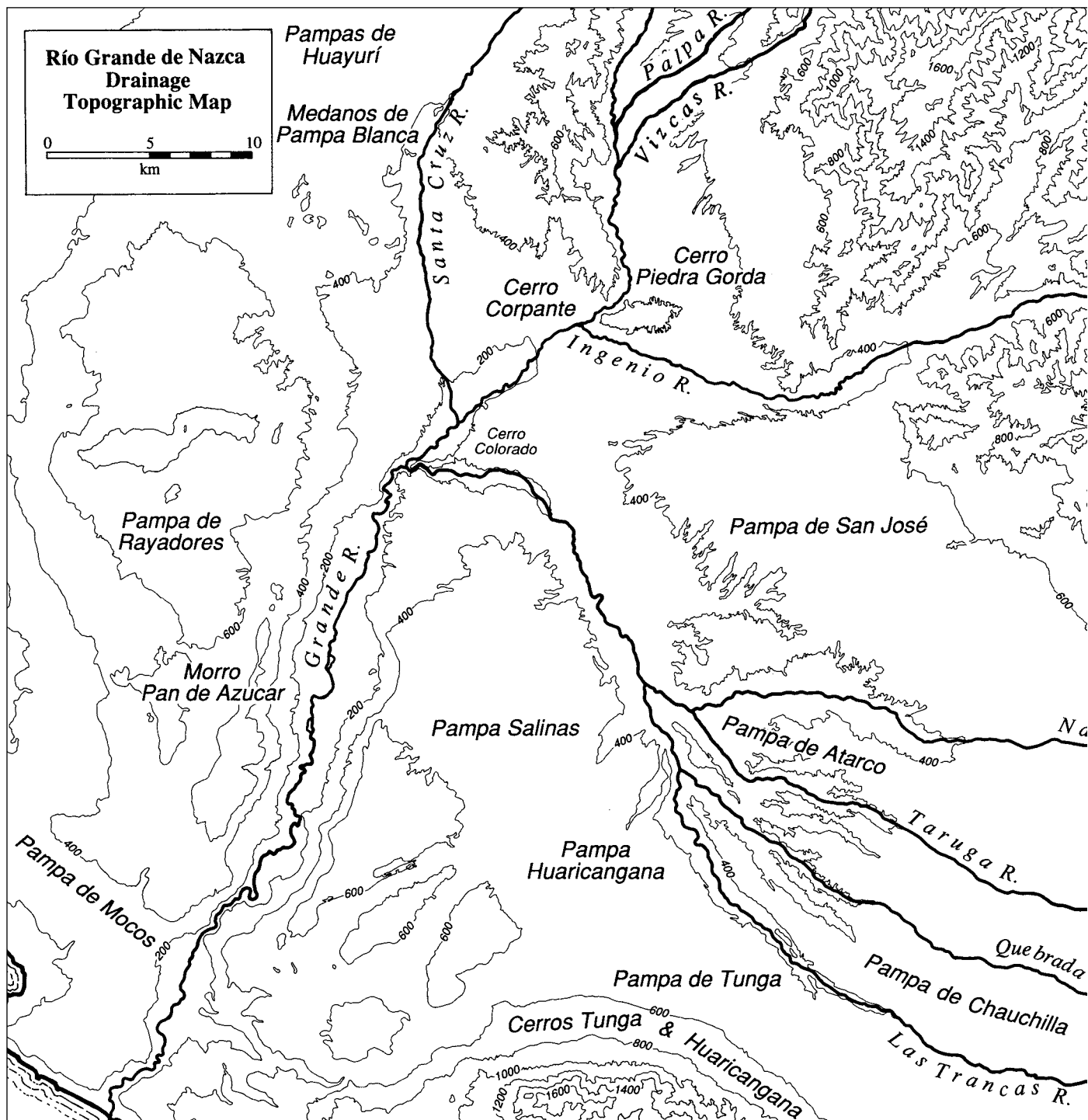
the valley. Beyond (west of) the angostura the valley widens suddenly.

Ecology

There are significant geographic and ecological differences along the length of the Ingenio River as well as

human-made ones that correspond to Mayer's (1985) production zones.³ In the case of the Ingenio Valley, there is a close correspondence between the ecological zones and the modern production zones (see fig. 2.4 for the valley sectors used in the survey that are based on these ecological and production criteria).

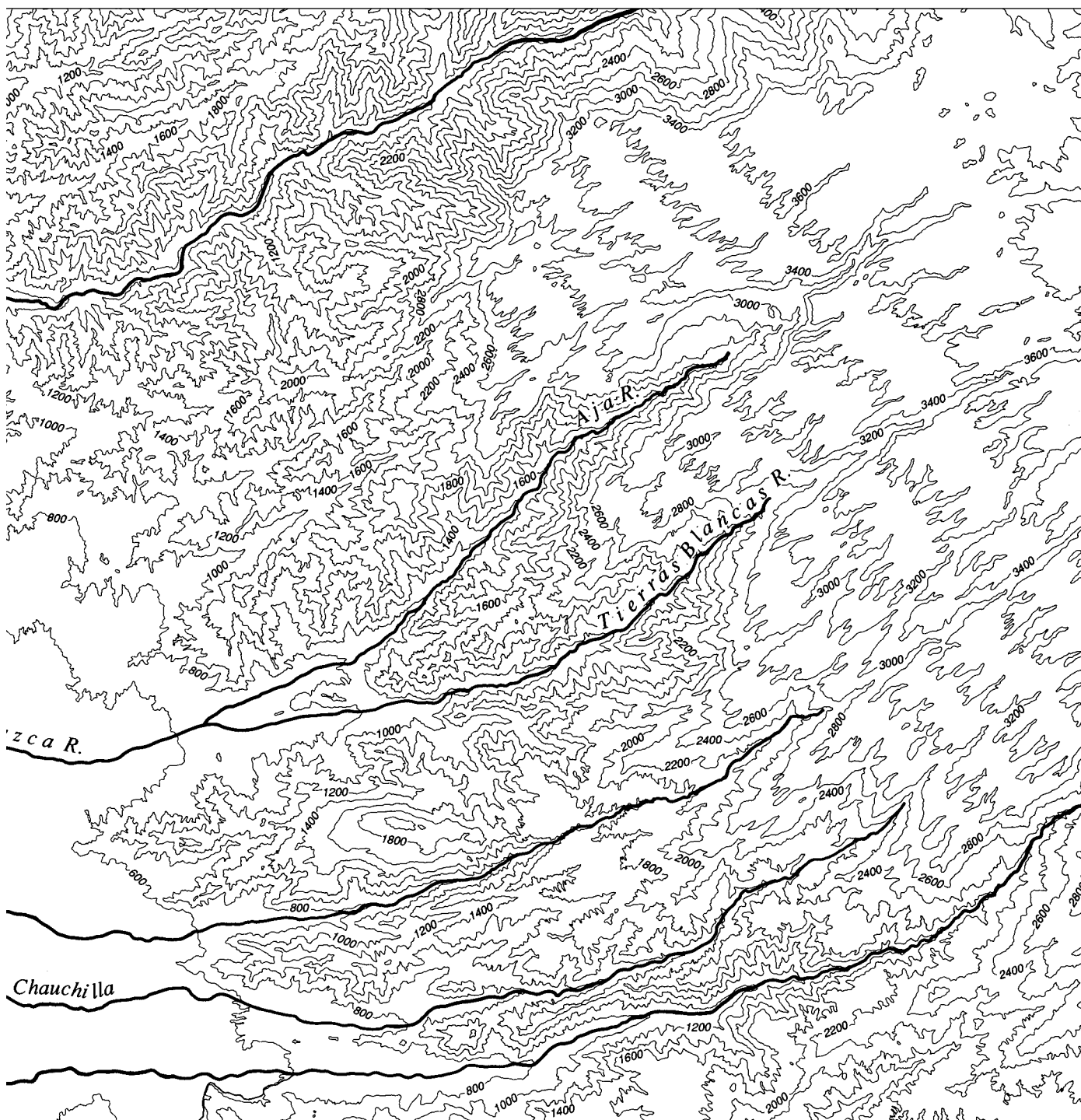
The narrow *upper* valley is yunga. Today the upper



2.2. Topographic map of the Río Grande de Nazca drainage.

valley is characterized by “agricultura de quebrada,” which consists of small-scale commercial cotton production, orchards of diverse fruit, alfalfa cultivation (especially around Totorayoc and Condoya), and some subsistence farming. Around 525 meters above sea level, at Hornilla, the valley widens, and there is an ecological transition marked by the disappearance of a particular

upper valley cactus known locally as sanke. The *middle* valley extends from here to the angostura, the dramatic constriction of the river gorge at La Legua. The *lower* valley lies between the angostura and the junction of the Ingenio and Grande Rivers. The *middle* Grande Valley is the fertile tract between Chiquerillo (at the junction of the Ingenio and Grande Rivers) and Cerro Colorado (at

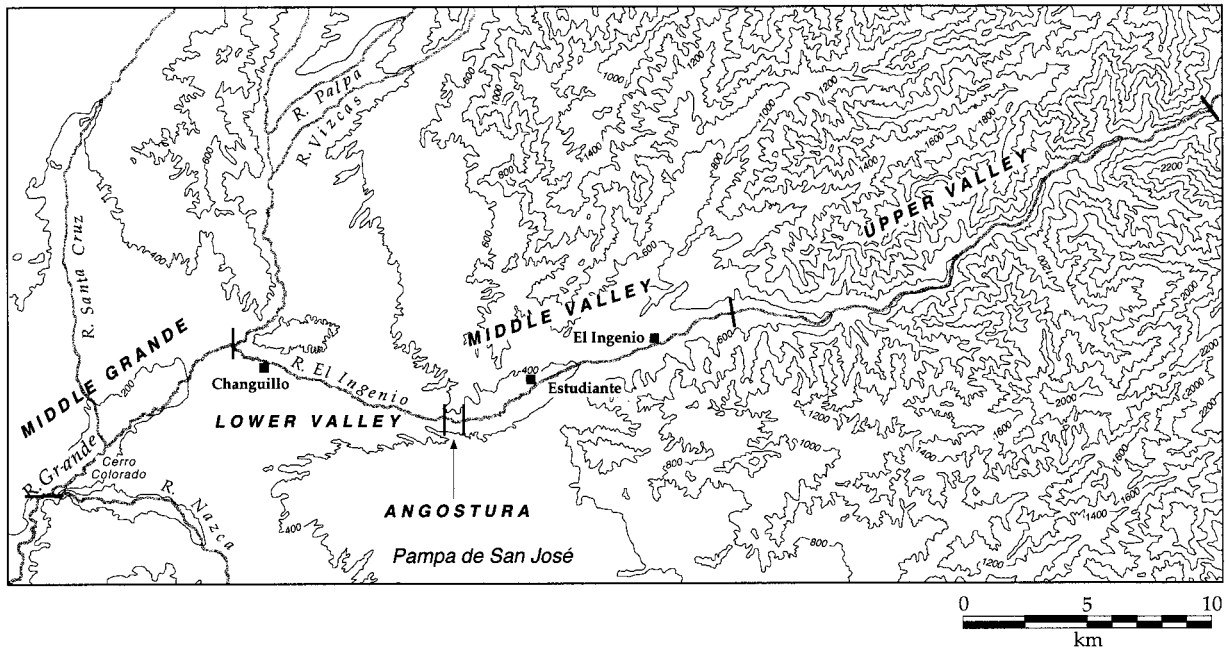


the junction of the Grande and Nazca Rivers). No ecological differences were perceptible between the middle and lower valley and the middle Grande: they are all chala. All three sectors are characterized by agricultura de costa; today there is large-scale commercial cotton production at the agrarian cooperatives that replaced the haciendas after the agrarian reform.

An inventory taken by ONERN (1971: 163) in August 1970 revealed the following hectareage of land for agricultural purposes in the Ingenio Valley (proper): squashes (5 hectares); various vegetables (5 hectares); citrus trees (70 hectares); wine grapes (30 hectares); mangoes (20 hectares); cherries (5 hectares); various fruits (5 hectares); alfalfa (50 hectares); cotton (1,900 hectares); maize (75



2.3. Aerial shot of the dramatic constriction (angostura) of the Ingenio Valley at La Legua (SAN 175-70/2721).



2.4. The ecogeographical sectors of the survey area.

Soils

ONERN (1971: 99, 101) reports that 58 percent of Ingenio's soils are Nazca type, which is highly productive with good drainage, low salt content, and moderately slow permeability. Ten percent is ribereño, which is evaluated as somewhat less productive than the Nazca type but still good. Another 6.2 percent of the soils is lindero, which has some problems such as moderate permeability and moderate susceptibility to erosion. Some 4.2 percent is classified as pedrones, whose productivity is evaluated as only medium to low. The riverbed (cauce de río) accounts for another 18.3 percent, with the remainder of soil types being minor in proportion.

Water Regime

In addition to irrigation water originating in the summer rains, agriculture is practiced year-round in the upper valley on the basis of pukios in the otherwise dry riverbed (fig. 2.5). These pukios are natural filtrations of water that pour out of the ground and fill the river channel, making it appear that the river is full of water when, in fact, it is spring water. ONERN's (1971) land-use maps show that bocatomas (feeder canals) are located precisely at the source of each pukio. Small irrigation channels divert the pukio water directly from its source to agricultural fields lower down. If this were the situation in the past as well, which I assume, then archaeological evidence of such an irrigation system would be unrecoverable given contemporary reuse.

ONERN (1971: 206) indicates that "in the upper portion of the Ingenio Valley, going down to San José Hacienda [in the middle valley], the west-southwest direction of flow of subterranean water is fixed by the bordering hills. The incline of the water table varies from 2 percent in the upper part to 1 percent in the narrow stretch where the Pan-American Highway crossed the valley."

I recorded pukios from Huacrapí, at the upper limit of the survey zone, to Molino at 600 meters above sea level. My informant, Mariano Pereyra of Molino, knew that other pukios existed higher up the valley but had no personal experience of them. We did not pursue this matter, as Huacrapí lies within the Department of Ayacucho, and we were afraid to proceed higher because of the Sendero Luminoso, MRTA terrorist insurgency at the time of survey. Below Molino there appear to be no more pukios till Mongo, located in the middle valley at 500 meters above sea level. The water regime below Mongo has not been studied. The water table is 10 meters

below the surface at Hornilla (Alejandro Calle, personal communication, 1988), a depth sufficient to suggest that this area of the valley was irrigated with riverwater.

The pukios in the upper valley do not all have the same amount of water. Local people recognize that some are richer in amount of water than others. The pukio that emerges just above a sharp valley constriction at Surcuña is considered the richest. And, indeed, ONERN (1971: 187) states that water capacity measurements are taken at Surcuña when water is scarce lower down at Pacaynihua. At Surcuña the valley walls are vertical, high, and almost within touching distance of each other. Bedrock impenetrability may explain the abundance of water at Surcuña.

The pukios in the upper valley always have water unless there has been a drought for several years; then even the pukios dry up. Informants also report that when the level of water in the pukios diminishes to 50 percent of normal, the usual mit'a (turn-taking) system of water distribution, which supplies water to all the farmers dependent on that pukio, ceases to function, and only one farmer is allowed to irrigate his fields. An irrigation council makes the decision. This is an interesting topic for further study and clarification. Besides being a source of water for irrigation, I was told by local informants that camarones (crawfish, which are freshwater in habitat) are abundant in the pukios between July and September and that in years of good water the camarones go upriver as early as April–May (the iconographic depiction of crawfish on early Nasca pottery may represent this knowledge).

In my study of the pukios in the upper valley I observed that they tended to occur at the lower end of a curving tract of agricultural land (fig. 2.5). This is where the sides of the valley close. This means that a pukio located in Tract A does not water that sector but, rather, the next one downvalley, Tract B. The water supply for a particular site's or sector's fields is located upstream in the territory of another sector. Thus the fields of the Huarasaca sector are watered by a pukio upriver in the Pullullo sector, and so on. This situation—obligatory because water does not run upstream—potentially has important ramifications for water control and management and the prehistoric sociopolitical organization of the upper Ingenio Valley and its manifestation in settlement patterns. I hypothesize that the distribution of pukios today is the same as two thousand years ago and that these pukios, at least in part, explain the distribution of habitation sites of the upper valley.

ONERN (1971: 226–228) identified forty-seven intake

canals on both sides of the middle and lower valley agricultural zone. These canals receive their water directly from the Ingenio River. This canal network encompasses 110.3 kilometers of principal canals, only 3.5 kilometers of which are formal concrete channels, and a secondary network that is 33.7 kilometers long. The system of primary and secondary canals irrigates 2,743 hectares. The rustic canals, which form the vast majority of the contemporary irrigation system, have variable slopes and are irregularly laid out without relationship to the land they water.

The principal canals are at Puyuri, Bogataya, San Pablo, Estudiante, San Gustavo, La Legua, and San Javier (ONERN 1971). These canals correspond to the location of former haciendas or current cooperatives and hamlets, except for San Gustavo, which is located at the lower end of the middle valley about a kilometer east of the angostura and is not associated with a settlement. The location of a major intake canal at Puyuri is very interesting because here the hills are nearly vertical and no ancient settlements were recorded. A kilometer downstream at Mongo ancient settlement resumes, and a pukio is known to exist. Small Nasca habitation sites and major geoglyphs exist around Bogataya.

ONERN (1971: 206) indicates that in the lower valley, in the area of San Javier, “the incline of the water table is more or less 1.3 percent. The configuration of the contour lines shows a certain impoverishment of the center of the valley because in the past few years [as of 1971] this part of the river has not received water. The subsoil in the area of San Javier is charged only by means of the narrow corridor, whether it is by a limited subterranean flow or by filtrations from the irrigation canals.”

Notes

1. Inadvertently, Cerro Colorado was shown south of the Grande-Nazca junction in Silverman 1993a: fig. 1.2. In fact, it lies between the two rivers, defined on its south side by the Nazca River. This drafting error has been corrected in figure 2.2 in the present volume.

2. In this book I reserve the word *pukio* exclusively for a natural spring or source of water. This is the meaning of the Quechua word. Rostworowski (1998: 144) presents persuasive lexical evidence indicating that the man-made filtration galleries were known as *huncólpi* in ancient times rather than *pukios*/*puquios*/*pukyu*/*pucyo*/*puyo* (versus Schreiber and Lancho Rojas 1995).

3. Production zones are a human-made differentiation of the landscape that is sometimes coterminous with ecological zones and sometimes crosses them; the “communally managed set of specific productive resources in which crops are grown in distinctive ways.” In highland societies today these production zones are foregrounded in calendrical fiestas such as the canal-cleaning festival that stresses the importance of maize cultivation (Mayer 1985: 60). Mayer (1985: 64) explicitly proposes six features of production zones, some of which can be examined archaeologically: (1) they are communal creations that provide individuals with access to them; (2) rights of access are controlled in part by the community, and “the concomitant obligations to these rights include the giving of labor and participation in the rule-making, rule-breaking, and rule-enforcing mechanisms of the local community”; (3) there are priorities and hierarchies of privilege concerning communal control and the rationing of strategic resources; (4) there is control over an agricultural calendar to ensure proper scheduling and facilitate community control over individuals; (5) this calendar is enacted ritually through agricultural ceremonies; (6) ritual validates the hierarchies and privileges “in terms of appeals to higher ideological principles” and functions to recruit labor, thereby “ensuring compliance and achieving a greater degree of solidarity.”

Survey Methodology and Data Analysis

I have discussed the theoretical aspects of settlement pattern archaeology in the first chapter and the physical parameters of the survey area in the second. In this chapter I will explain the manner in which the survey was conducted, how the data were analyzed, and why I made the indicated decisions.

Survey

Ammerman (1981: 63) has observed that archaeologists typically regard survey as the preliminary step to excavation, that of finding an appropriate site to explore more fully. A clear example of this approach was the survey conducted by William Duncan Strong on the south coast of Peru in 1952. Strong (1957: 3) said, “The primary purpose of the 1952–53 expedition was to make stratigraphic cuts in order to place the Nazca culture in relation to the Cavernas culture . . . My brief survey trips in the Ica-Nazca area in 1940, 1941, and 1949 had not revealed such stratified sites. Therefore, an important part of the 1952–53 expedition was to make a surface survey of the large area, both for its own sake and particularly to select

the most promising sites for sondage.” Strong readily admitted—and his site distribution map (1957: fig. 1) confirms—that his survey was not “thorough.” My survey attempted to correct the deficiencies in this earlier fieldwork by conducting a full-coverage survey in one valley.

The Choice of Valley

I chose to continue working in the Río Grande de Nazca drainage because of the many questions still remaining about Nasca society after the conclusion of my fieldwork at Cahuachi, particularly insofar as the location and nature of early Nasca domestic settlements were concerned. The Ingenio Valley was an appropriate valley to survey because it is a water-rich tributary; only the Grande itself has more water (ONERN 1971: cuadros 7-RH, 19-RH; see CD: table 2.1). Also, according to ONERN (1971: gráfico no. 10), Ingenio has more agricultural hectareage than the Grande or other tributaries. Therefore, I expected the valley to have a dense prehistoric occupation. Furthermore, although Cahuachi is located in the Nazca Valley, I

thought that Ingenio could offer perspectives on the catchment area of the ceremonial center because a major lineal geoglyph crosses the Pampa between Cahuachi and Site 165 (Ventilla) in the Ingenio Valley, suggesting a direct link between Cahuachi and the Ingenio Valley (see Silverman 1990b: fig. 2).

The south side of the middle Ingenio Valley borders that part of the Pampa with the densest concentration of geoglyphs (see, e.g., Rossel Castro 1977: lámina XVI). This offered hope of finding sites whose inhabitants used the Pampa. In addition, Rossel Castro (1977: fig. 45) already had published a plan of geoglyphs on a hillside at Bogataya, so I knew the valley could provide direct insight into the geoglyph phenomenon off the Pampa as well.

Finally, in terms of coast-highland relationships, Menzel (1968: figs. 18–22) had published photographs of Atarco B pottery from a rich tomb at San José in Ingenio, so the valley offered the possibility of yielding more information about the Nasca-Wari interface. Furthermore, the earliest colonial documents give the name of the Ingenio Valley as “Collao de Lucanas” (Menzel 1959), a reference to the adjacent highland area, suggesting significant interrelationships between the coastal valley and highlands.

Constraints

A major factor influencing the conduct of the project was the political climate in Peru in 1988–89. At that time the country was in the throes of an ever-worsening guerrilla insurgency movement and dangerously forceful military response. The region in which survey was conducted was particularly precarious because of its easy communication with Ayacucho, heartland of the Sendero Luminoso, MRTA terrorists. Local friends commented to me frequently on the presence of strange young men and women—*forasteros*—purchasing unusually large quantities of food and pharmaceuticals in Nazca (insurgents were using the bustling town to re-provision themselves with food and medical supplies). With every month, the situation in the survey area became more uncertain as terrorist activity came closer. Soon after our departure, terrorists attacked the police station in the town of El Ingenio and bombed Palpa’s Plaza de Armas, near which we had lived.

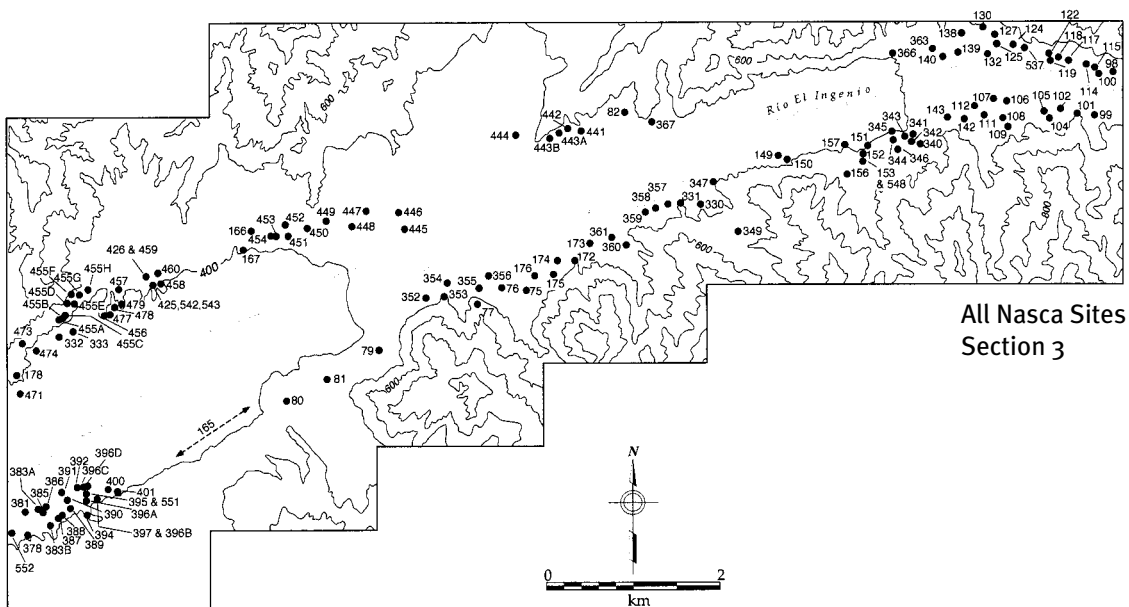
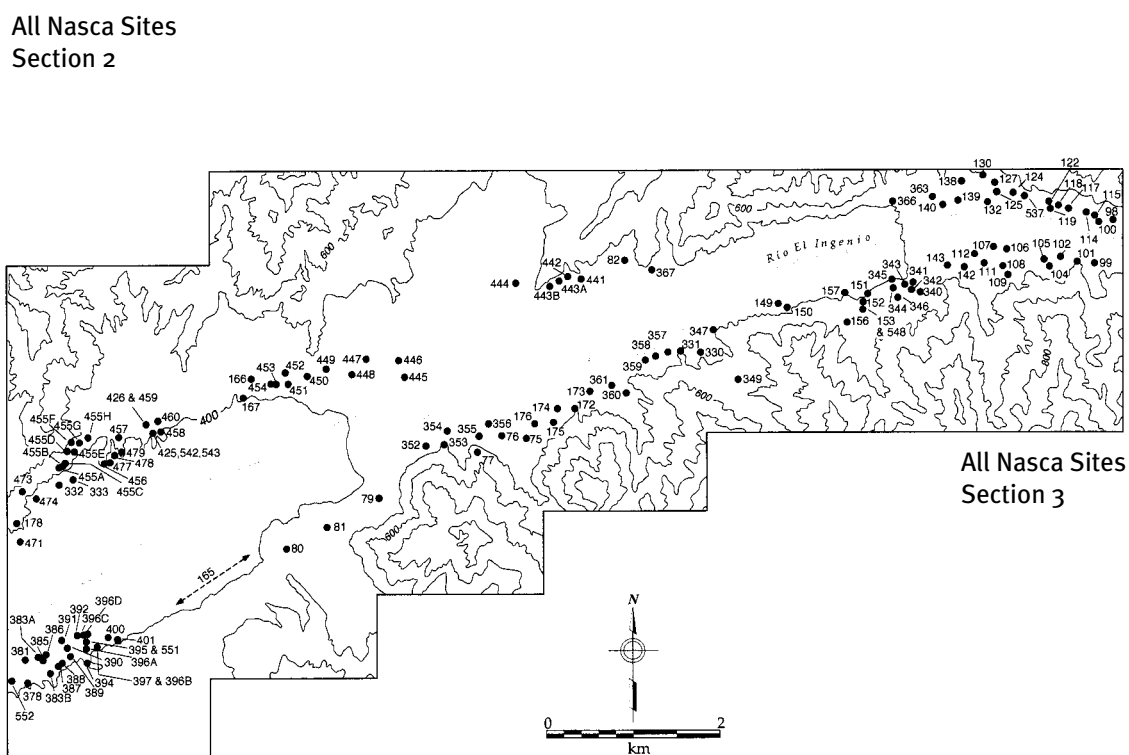
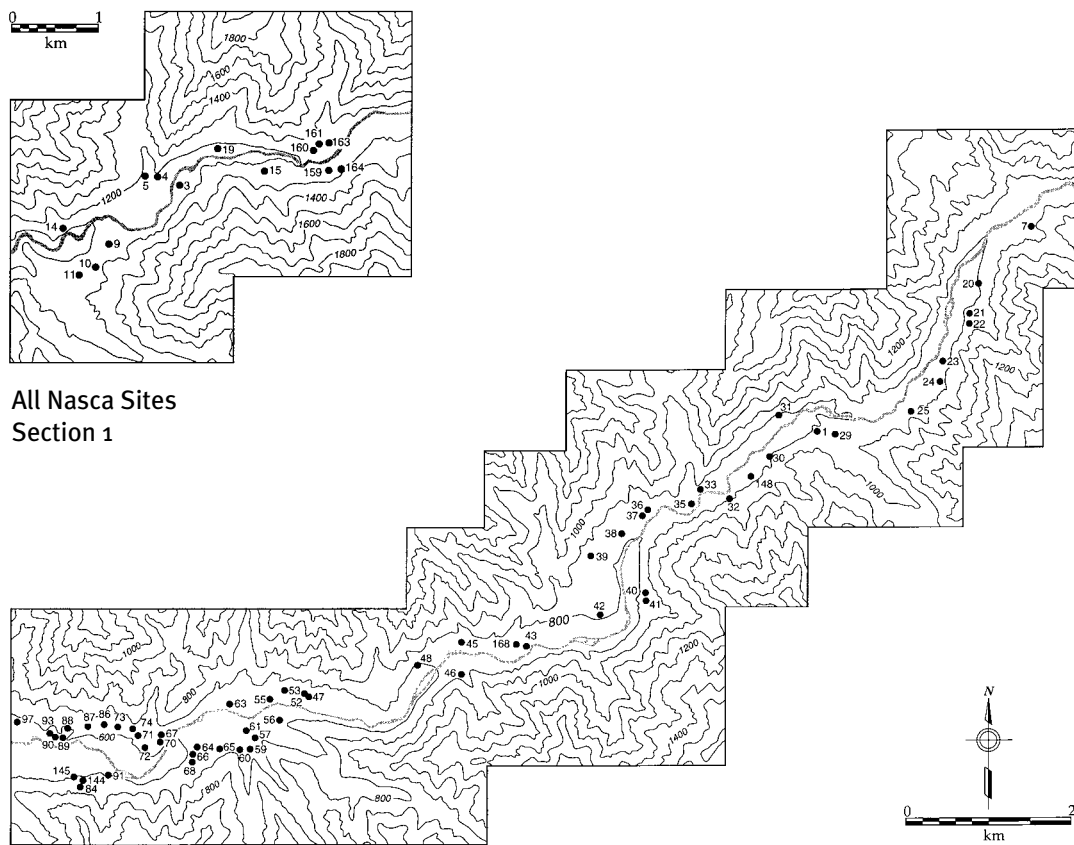
In response to the growing threat I perceived to the safety of the project personnel, I made several methodological adjustments to my original plan for fieldwork. I had wanted to determine the uppermost limit of Nasca occupation in the Ingenio Valley. However, the survey

could not proceed above 1,400 meters above sea level because of the state of emergency in the Department of Ayacucho (indeed, our highest sites are in Ayacucho). Also, rather than having the whole field crew together, I split project personnel into three two-person teams so as to be able to finish the survey; unfortunately, this resulted in uneven detail of note taking. Consistent detailed mapping was sacrificed for areal coverage. We made only eight instrument-based site plans, although sketch plans were made at other sites. Lab work was kept to a minimum: pottery was washed, marked, and identified, but full analysis was not conducted.

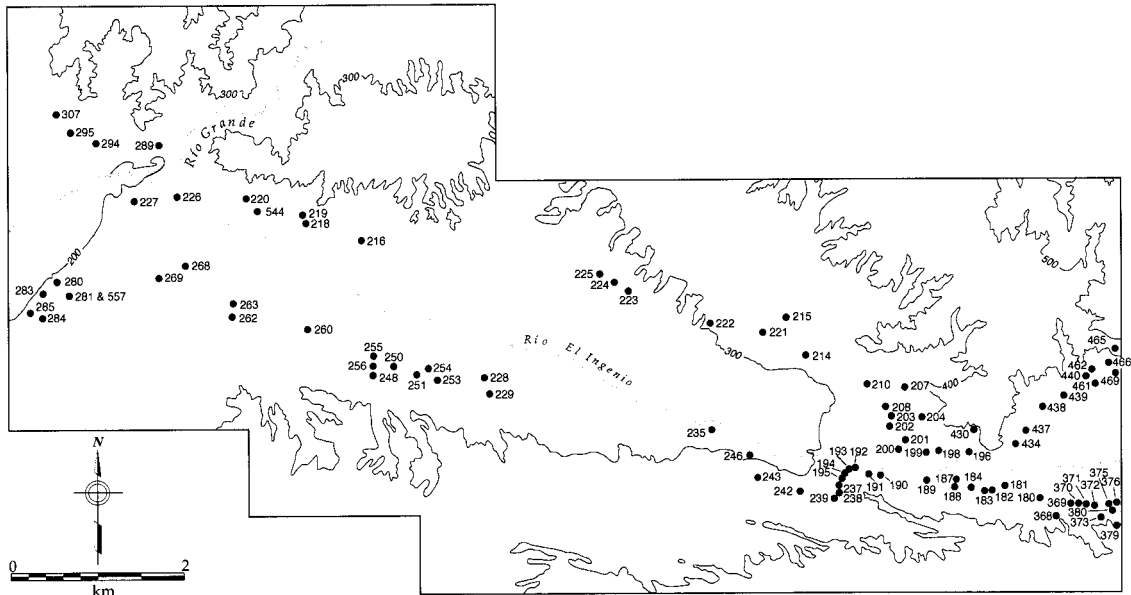
In spite of the externally conditioned limitations on the project, much was accomplished. The survey transect encompassed all of the Ingenio Valley below 1,400 meters above sea level and extended to include the middle Grande Valley, thus taking the survey down to 200 meters above sea level at the junction of the Grande and Nazca Rivers.¹ A distance of approximately sixty lineal kilometers was surveyed within which the valley varies in width from less than two hundred meters to almost three kilometers under today’s agricultural conditions. More than five hundred sites were identified, ranging in age from the Early Horizon through the Colonial Period. This book deals only with the Nasca sites (fig. 3.1a, b; table 3.1). The instrument mapping of five Nasca habitation sites (Sites 21, 35, 39, 43, 46), two ceremonial sites (Sites 80 and 81), and a special-purpose Middle Horizon site (Site 55B) was an achievement because at that time Cahuachi was the only Nasca site to have been mapped in any detail (Silverman 1993a: figs. 2.3–2.6). In addition, various plans of geoglyph sites were produced on the basis of aerial photogrammetric interpretation and ground verification with a Brunton compass and meter tapes (see Silverman 1990b).

Survey Methodology

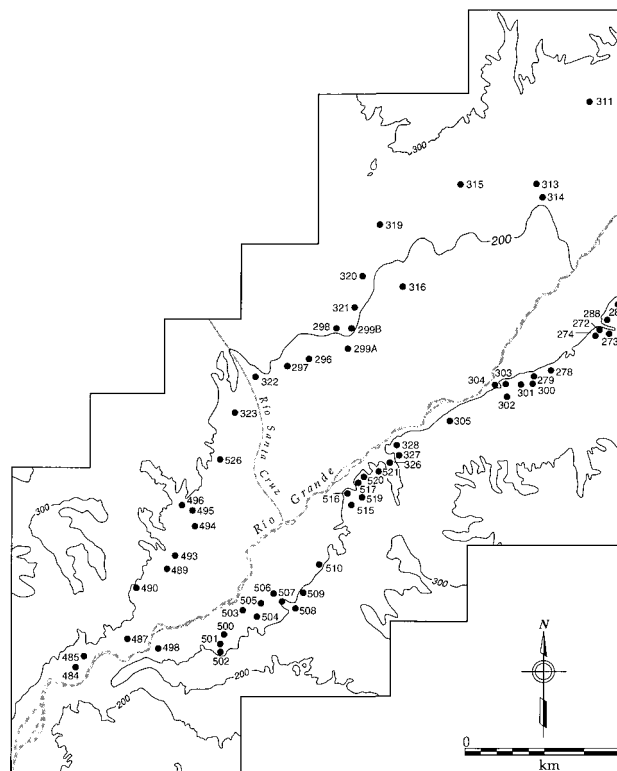
The Peruvian coast and the Ingenio–middle Grande, specifically, correspond to what Ammerman (1981: 64) describes as favorable conditions for survey: “the visibility of sites on the surface of the landscape is usually good, and conditions for carrying out survey work are for the most part good as well.” Site preservation is outstanding when not altered by modern earth-moving activity such as agricultural expansion, dam building, or residential or industrial construction. Of course, normal geological and environmental factors affect site preservation as well. These include erosion, in situ depositional filling, postabandonment formation of quebradas, river



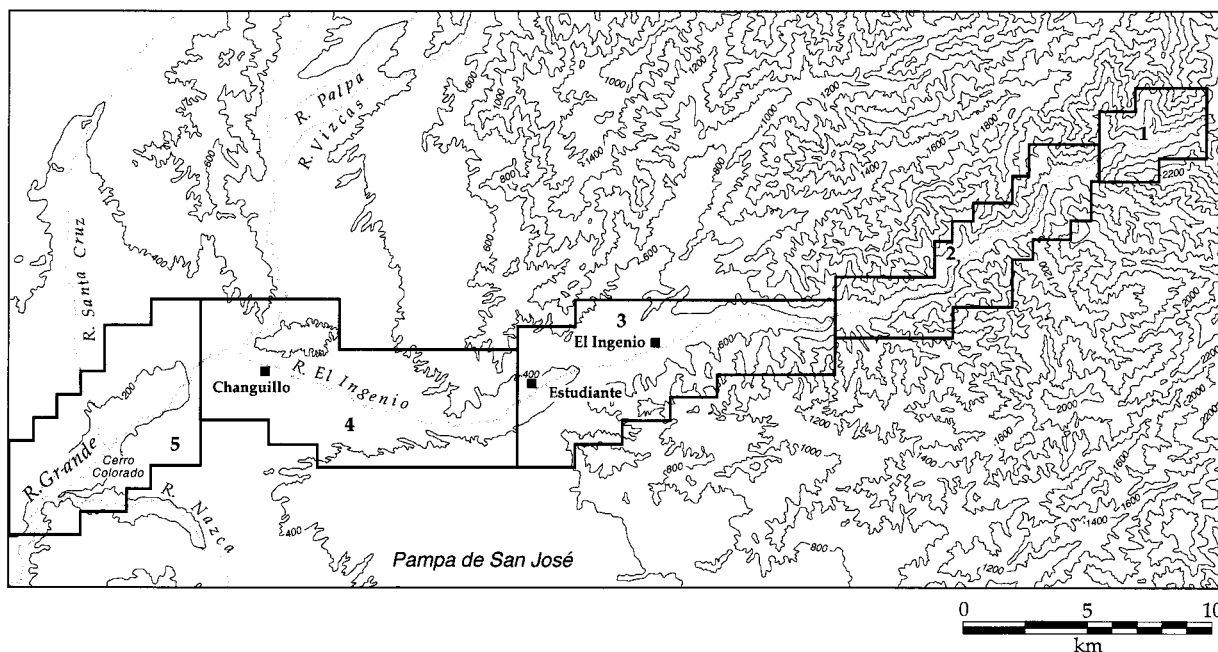
3.1a. Site distribution map in five sections showing location of all Nasca sites identified on survey.



All Nasca Sites
Section 4



All Nasca Sites
Section 5



3.1b. Key showing location of the five plans along the survey transect: (1) Concepción; (2) Molino/Totorayoc; (3) El Ingenio; (4) Changuillo; (5) Los Colorados (names according to Ministerio de Agricultura 1:10,000 catastro rural maps).

channel undercutting, and huaicos, among other processes and events. In the valley bottoms archaeologists face the significant likelihood that sites are buried by alluvial deposition.

The valleys of the Río Grande de Nazca drainage are narrow, and sites cluster on the arid, vegetationless hillsides, off prime agricultural land. Asphalt and/or dirt roads crisscross the valleys, making vehicular access to sites easy. Even during the summer floods, most of the rivers can be forded either by car or foot. Archaeologists currently conducting surveys in the coastal valleys of Peru, myself included, affirm that it is possible to achieve full coverage: to register every extant site visible on the surface (see, for example, Wilson 1988). To adapt Cowgill's (1990: 249) words, Peruvianists believe we can "survey an entire region at a uniform and reasonably high intensity" such that the need for spatial sampling and/or predictive modeling of the site location is mitigated or precluded (on the latter, see, e.g., Mueller 1979).

A systematic 100 percent pedestrian survey was conducted, aided by the Servicio Aerofotográfico Nacional's (SAN) excellent series of aerial photographs (taken at an altitude of 15,000 feet in 1944 and 10,000 feet in 1970), the Instituto Geográfico Nacional (IGN; formerly the Instituto Geográfico Militar, or IGM) topographic maps (scales of 1:50,000, 1:100,000), and the Ministerio de Agricultura catastro rural maps (scale of 1:10,000). Once a site was located in the field, it was walked to determine

its extent and outlined in colored grease pencil on the corresponding aerial photograph. Small sites were measured in the field with twenty-five-meter tapes. The areas of larger sites were calculated on the aerial photographs with a LASICO L20M planimeter.

Under the guidelines of the Michigan Survey Method (see Parsons 1971: 16–20; Wilson 1988), survey of a site involves the methodical and choreographed movement of a multiperson team across the terrain at standard intervals of distance. Surface features (portable and fixed) are called out by surveyors and recorded by a leader, and potsherds are collected. On my survey I preferred to make a preliminary site reconnaissance to ascertain the existence of functional or chronological site sectors. If present, I conducted note taking and systematic surface collecting within the sectors rather than by arbitrary distances. I also chose to modify the Michigan Survey Method so as not to mix collections through random sampling units. Furthermore, Nasca sherd density and diagnostic pottery were sometimes so limited as to preclude the usefulness of random sampling (see Redman and Watson 1970). This procedure would have resulted in insufficient collections of diagnostic material necessary for relative dating. My field methodology has provided the "sensitivity" advocated by Cowgill (1990: 253–255), for I have observed and recorded even small, inconspicuous surface sherd scatters.

TABLE 3.1. Locator for Sites on Fig. 3.1a

<i>Site #</i>	<i>m a.s.l.</i>	<i>map #</i>	<i>bank</i>		<i>Site #</i>	<i>m a.s.l.</i>	<i>map #</i>	<i>bank</i>
1	950	2	s		73	700	2	n
3	1,250	1	s		74	700	2	n
4	1,250	1	n		75	445	3	s
5	1,250	1	n		76	460	3	s
7	1,050	2	s		79	525	3	s
9	1,150	1	s		80	425	3	s
10	1,175	1	s		81	425	3	s
11	1,175	1	s		82	500	3	n
14	1,200	1	n		84	700	2	s
15	1,275	1	s		86	725	2	n
19	1,275	1	n		87	675	2	n
20	1,100	2	s		88	700	2	n
21	1,150	2	s		89	700	2	n
22	1,050	2	s		90	650	2	n
23	1,025	2	s		91	700	2	s
24	1,025	2	s		93	650	2	n
25	1,050	2	s		97	800	2	n
29	1,000	2	s		98	700	3	n
30	900	2	s		99	600	3	s
31	1,000	2	n		100	700	3	n
32	950	2	s		101	600	3	s
33	850	2	n		102	550	3	s
35	900	2	n		104	600	3	s
36	900	2	n		105	600	3	s
37	900	2	n		106	600	3	s
38	900	2	n		107	550	3	s
39	950	2	n		108	575	3	s
40	900	2	s		109	650	3	s
41	900	2	s		111	525	3	s
42	800	2	n		112	525	3	s
43	800	2	n		114	750	3	n
45	800	2	n		115	750	3	n
46	750	2	s		117	575	3	n
47	725	2	n		118	550	3	n
48	800	2	n		119	550	3	n
52	700	2	n		122	575	3	n
53	700	2	n		124	550	3	n
55	675	2	n		125	550	3	n
56	700	2	s		127	600	3	n
57	675	2	s		130	625	3	n
59	750	2	s		132	550	3	n
60	650	2	s		138	625	3	n
61	625	2	s		139	550	3	n
63	650	2	n		140	525	3	n
64	650	2	s		142	575	3	s
65	650	2	s		143	550	3	s
66	650	2	s		144	700	2	s
67	800	2	n		145	600	2	s
68	625	2	s		148	950	2	s
70	700	2	n		149	600	3	s
71	775	2	n		150	575	3	s
72	700	2	n		151	550	3	s

TABLE 3.1. Locator for Sites on Fig. 3.1a (continued)

Site #	m a.s.l.	map #	bank	Site #	m a.s.l.	map #	bank
152	575	3	s	224	300	4	n
153	600	3	s	225	300	4	n
156	550	3	s	226	250	4	n
157	550	3	s	227	225	4	s
159	1,300	1	s	228	280	4	s
160	1,350	1	n	229	280	4	s
161	1,350	1	n	235	290	4	s
163	1,300	1	n	237	330	4	s
164	1,300	1	s	238	350	4	s
165	400	3	s	239	350	4	s
166	450	3	n	242	350	4	s
167	425	3	n	243	325	4	s
168	800	2	n	246	300	4	s
172	550	3	s	248	280	4	s
173	500	3	s	250	280	4	s
174	550	3	s	251	300	4	s
175	500	3	s	253	280	4	s
176	550	3	s	254	280	4	s
178	500	3	n	255	280	4	s
180	375	4	s	256	280	4	s
181	350	4	s	260	280	4	s
182	350	4	s	262	250	4	s
183	350	4	s	263	230	4	s
184	350	4	s	268	225	4	s
187	350	4	s	269	225	4	s
188	350	4	s	272	250	5	s
189	350	4	s	273	250	5	s
190	350	4	s	274	250	5	s
191	350	4	s	278	240	5	s
192	350	4	s	279	250	5	s
193	350	4	s	280	225	4	s
194	350	4	s	281	225	4	s
195	350	4	s	283	225	4	s
196	375	4	n	284	230	4	s
198	375	4	n	285	230	4	s
199	375	4	n	287	230	5	s
200	350	4	n	288	240	5	s
201	350	4	n	289	310	4	UG: w
202	350	4	n	294	240	4	n
203	350	4	n	295	230	4	n
207	325	4	n	296	200	5	n
208	325	4	n	297	220	5	n
210	350	4	n	298	200	5	n
214	325	4	n	299	190	5	n
215	340	4	n	300	260	5	s
216	250	4	n	301	240	5	s
218	250	4	s	302	240	5	s
219	219	4	n	303	230	5	s
220	250	4	n	304	200	5	s
221	325	4	n	305	220	5	s
222	325	4	n	307	250	4	n
223	300	4	n	311	230	5	n

TABLE 3.1. Locator for Sites on Fig. 3.1a (continued)

<i>Site #</i>	<i>m a.s.l.</i>	<i>map #</i>	<i>bank</i>	<i>Site #</i>	<i>m a.s.l.</i>	<i>map #</i>	<i>bank</i>
313	210	5	n	385	380	3	s
314	210	5	n	386	380	3	s
315	220	5	n	387	380	3	s
316	190	5	n	388	380	3	s
319	250	5	n	389	440	3	s
320	240	5	n	390	380	3	s
321	230	5	n	391	380	3	s
322	210	5	n	392	380	3	s
323	200	5	n	394	380	3	s
326	200	5	s	395	380	3	s
327	220	5	s	396	380	3	s
328	240	5	s	397	380	3	s
330	450	3	s	400	380	3	s
331	480	3	s	401	380	3	s
332	400	3	n	425	410	3	n
333	400	3	n	426	420	3	n
340	540	3	s	430	430	4	n
341	540	3	s	434	380	4	n
342	540	3	s	437	430	4	n
343	540	3	s	438	430	4	n
344	540	3	s	439	430	4	n
345	540	3	s	440	380	4	n
346	540	3	s	441	480	3	n
347	500	3	s	442	480	3	n
349	540	3	s	443	480	3	n
350	425	3	s	444	480	3	n
352	450	3	s	445	440	3	n
353	500	3	s	446	440	3	n
354	450	3	s	447	430	3	n
355	500	3	s	448	430	3	n
356	450	3	s	449	450	3	n
357	480	3	s	450	450	3	n
358	480	3	s	451	430	3	n
359	480	3	s	452	450	3	n
360	500	3	s	453	430	3	n
361	450	3	s	454	430	3	n
363	550	3	n	455	420	3	n
366	550	3	n	456	410	3	n
367	500	3	n	457	420	3	n
368	400	4	s	458	410	3	n
369	370	4	s	459	410	3	n
370	370	4	s	460	410	3	n
371	370	4	s	461	380	4	n
372	370	4	s	462	380	4	n
373	400	4	s	465	440	4	n
375	350	4	s	466	390	4	n
376	350	4	s	469	380	4	n
378	390	3	s	471	380	3	n
379	350	4	s	477	410	3	n
380	350	4	s	478	410	3	n
381	350	3	s	479	400	3	n
383	380	3	s	484	130	5	n

TABLE 3.1. Locator for Sites on Fig. 3.1a (*continued*)

<i>Site #</i>	<i>m a.s.l.</i>	<i>map #</i>	<i>bank</i>	<i>Site #</i>	<i>m a.s.l.</i>	<i>map #</i>	<i>bank</i>
485	150	5	n	510	200	5	s
487	150	5	n	513	220	5	s
489	180	5	n	515	220	5	s
490	225	5	n	516	230	5	s
493	180	5	n	517	230	5	s
494	200	5	n	519	230	5	s
495	200	5	n	520	220	5	s
496	200	5	n	521	220	5	s
498	160	5	s	524	180	5	n
500	180	5	s	526	190	5	n
501	190	5	s	537	575	3	n
502	210	5	s	542	410	3	n
503	180	5	s	543	410	3	n
504	180	5	s	544	250	4	n
505	180	5	s	548	600	3	s
506	200	5	s	551	380	3	s
507	200	5	s	552	350	4	s
508	220	5	s	557	225	4	s
509	230	5	s				

Recording Sites

A major issue in the registration of sites is the enduring archaeological debate over what constitutes a site (see, e.g., Thomas 1979: 61–62). On survey, I took a minimalist view of a site and registered any evidence of ancient human activity, from sherd scatters to huge architectural complexes.

Some sites were dissected by huaicos after their occupation.² Other sites were deliberately placed on either side of an existing fracture. I generally distinguished sites as discrete when quebradas intervened. In the lab, however, I sometimes later lumped them, deciding that I had been tricked by the postoccupational topography. An example of this is the Site 160-161-163 cluster.

Related to this issue of “what is a site” is Ammerman’s (1981: 77–78) critical methodological issue of overestimation. Overestimation concerns the registration of sites, specifically, the problem of representing multicomponent and horizontally stratified sites on distribution maps and the fact that archaeologists commonly impute contemporaneity to sites attributed to the same time period, even though they may differ in absolute date by many decades. Wilson (1988: 80) assigned a discrete final site number to each spatial-chronological component identified on his survey of the Santa Valley (i.e., the same site could receive multiple numbers according to how many temporal occupations were recognized). In con-

trast, I have maintained the integrity of our original field numbers with the exception of the corrections noted below.

Sites were given field numbers (unique arabic numerals) in order of discovery. However, this procedure has not resulted in a geographical sequence of numbered sites. Here’s why. Each of the three survey teams received a group of numbers in the morning. Due to normal complications such as vehicle breakdown, illness, or obligatory social invitations, we sometimes did not finish an area on a particular day and for a variety of reasons might not return to that area again till later, having continued survey elsewhere. This has resulted in a site map with discontinuous numbers (as seen on fig. 3.1a).

Furthermore, within sites, sectors were defined on the basis of topographical, architectural, spatial, and/or functional differences, if such were present. Analysis subsequently revealed that some sectors were, in fact, discrete sites, whereas other discrete field numbers could be lumped in certain periods of time to conform single sites. In the former situation, new field site numbers were assigned to previous site sectors and appear thus on the final site distribution map. In the latter situation, superfluous site numbers were dropped and not reused.

I readily admit that my approach suffers from what Wilson (1988: 80) describes as an “exasperating” scatter of field numbers over the length of a valley. Yet compensating this numerical scrabble is the fact that the reader

can see and compare changing settlement patterns over time and refer with ease to the same site irrespective of date. Also, future researchers will be able to assign new field numbers should more sites be discovered in the survey area. Indeed, shortly after the close of the project, road construction near San José revealed the presence of a remarkable post-Nasca painted temple that was recorded by Federico Kauffmann Doig (see Kauffmann Doig and Chumpitaz 1993). Kauffmann Doig's description of the site location leads me to believe that it was buried within our field site 434. But until I have the opportunity to confirm its precise location and context, I have chosen to assign it a new site number, 558.

Surface Collections

Prior to collecting diagnostic pottery from site surfaces, sherd density (of diagnostic and undiagnostic pottery) was determined in accordance with Parsons's (1971: 22–23) discrimination of surface distribution as very scarce, scarce, moderate, heavy, and very heavy. The same surface density terminology was also used for noting the presence of obsidian.

Dating the Sites Recorded on Survey

Lawrence E. Dawson worked out a relative chronology of the Nasca pottery style using a nontypological and non-quantitative method of pottery analysis called "seriation by continuity of features and variation in themes" (see Rowe 1959, 1961; see discussion in Silverman 1993a: 35–37). Dawson subdivided the Nasca style into nine sequential phases, Nasca 1 through 9 (see also Blagg 1975; Pezzia 1969: 129–140; Proulx 1968, 1983; Roark 1965; Rowe 1960; Silverman 1993a: figs. 3.2–3.8). The sequence was subsequently further refined into subphases (e.g., Silverman 1977 for Nasca 2; Proulx 1968 for Nasca 3; Wegner ms. for Nasca 6; Menzel ms. for Nasca 7 and 8; Paulsen 1983 for Nasca 8; Menzel 1964 for Nasca 9).

This Berkeley seriation was explicitly created to enable archaeologists to trace change in the archaeological record. But the sequence was developed largely on the basis of whole ceramic vessels (with and without provenience) from mortuary contexts (see Rowe 1962). The ceramic sample used to devise the seriation encompassed only the fanciest (and hence most "featureful") pottery. Furthermore, the entire nine-phase Nasca sequence has never been adequately demonstrated stratigraphically (see discussion in Silverman 1993a).

On survey, sites were dated by their diagnostic surface pottery using the Berkeley seriation of the Nasca ceramic style. In general, surface pottery was well preserved (e.g., sherd surfaces usually were not eroded either by wind blasting or saline deposition). However, many sherds in the surface collections frequently did not preserve those minimal features with which one phase had been discriminated from another. A converse issue is the potential overrepresentation of Nasca 1 in the field because of its easy recognizability on site surfaces. Furthermore, once washed in the lab, many sherds proved to be less diagnostic of phase than expected when collected in the field.

Surface Ambiguity: Associating Site Date with Functional Site Type

Cowgill (1990: 251) has stated that survey results can be ambiguous and, hence, unsatisfactory even though the survey procedures used may be unbiased and executed correctly. Cowgill considered the problem of "sample sizes [that] are too small to permit sufficiently accurate estimates of important population parameters." In the analysis of the Ingenio–middle Grande survey data, degree of certainty for phase-based functional identification varies from high to possible (see CD: spreadsheets 5.1, 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1). Uncertainty has several causes. The association of surface pottery of a particular phase with surface features may be ambiguous. The functional interpretation of a site's surface features may be ambiguous, even if the relative date of the site is clear. Uncertainty about site function and occupational phase is mostly attributable to small surface collection size. I fully acknowledge the riskiness of attributing a site to a particular phase on the basis of limited surface material, let alone given the commonly encountered situation of multiple Nasca phases at sites without horizontal stratification.

When surface collections could be phased according to the Berkeley seriation, the breakdown of small collections of sherds by phase at multicomponent sites often yielded results so numerically small as to be statistically insignificant for the preferential attribution of a site to a particular phase. For example, what would you do with a site—typical on survey—on whose surface there were nine Nasca 1 sherds, three Nasca 2 sherds, three Nasca 3 sherds, three Nasca 4 sherds, twelve Nasca 5 sherds, one Nasca 7 sherd, and twenty Nasca sherds that could not be phased? Nasca 1 and Nasca 5 would seem to be the dominant phases. However, phasing of those twenty unphase-

able sherds could easily change our perception. And the isolation of phase 7 could be due to nonrecognition of Nasca 6 in the collection or its fortuitous nonrepresentation on the site surface, rather than indicating the abandonment of the site in Nasca 6 times.

Some sites were eliminated from further consideration as “unknown—not relevant” because nothing could be legitimately inferred about them. This could be the result, for instance, of site surfaces that were too disturbed to propose either a function or date, or well-preserved sites might lack diagnostic surface pottery (including decorated Nasca pottery that could not be phased) (CD: spreadsheet 3.2, SDM 3.1). Also, looting and erosion have also contributed to surface ambiguity. Ironically, the lack of looting at habitation sites creates a paucity of surface pottery compounded by two thousand years of postdepositional processes. This book presents a best-case scenario but advocates excavation to determine precisely the occupational phases and associated functions of sites.

Functional Site Typology

I have categorized Nasca sites as habitation sites (including habitation sites with an encapsulated ceremonial function), cemeteries, civic-ceremonial sites, and geoglyphs. Several special-purpose sites (such as a control point to the Pampa and refugios for making geoglyphs) also were recorded. Few economically specialized (e.g., irrigation features, pottery workshops, lithic workshops, extractive) Nasca sites were observed. Some sites had multiple functions. No Nasca defensive sites were identified.

Let’s consider functional categorization. Schreiber and Kintigh (1996: 578) have argued that the “definition of site types varies by geographic region, prehistoric culture, and level of social complexity.” Also, archaeologists define site types on the basis of their own biases (e.g., a priori assumptions of hierarchy) and for their own use. We must not ignore the fact that ancient people had their own classificatory schemes (see chapter 1) or, following Miller (1982: 23), that “categorisation processes mediate and organise the social construction of reality.” It behooves us to discover the ancient schemes of classification, for they “may be our best means for understanding and interpreting the remains of material production” (Miller 1982: 23). Just as Lathrap and DeBoer (Lathrap 1962: 236; DeBoer and Lathrap 1979) emphasize the necessity of an emic classification of pottery vessels, so archaeologists must seek to determine an ancient people’s cognition of landscape and nature and organization

of settlement thereupon (see chapter 1). Artifacts are the products of human processes of categorization (Miller 1982). So, too, the Andean landscape was categorized and structured by culturally coherent cognitive and cosmological schemes (see chapter 1). But the archaeologist studying ancient Nasca society is challenged to recognize this patterning because of the separation in space and disjunction and restructuration over time between Nasca and significantly later societies for which relevant documentation exists. Therefore, with regret but no recourse, I use a highly standardized Western formulation. However, in a radical departure from the canonized form of site distribution maps, I have refused to create settlement pattern hierarchies because of the arguments I make in chapter 1 concerning the essential inaccessibility of the emic landscape to archaeologists.

Habitation Sites

The most common habitation sites identified on survey are terraced hillsides (fig. 3.2). These sites are identified as habitation because they are located near agricultural land, have utilitarian pottery and the occasional grinding stone on them, and are sometimes subdivided into smaller spaces interpreted as actual rooms or houses and patios. These archaeological sites conform to ethnographic observations of modern settlements located on hillsides off agricultural land (fig. 3.3). At some of these, I have observed modern wattle-and-daub houses with fieldstone foundations placed on a deliberately flattened terrace (fig. 3.4). This suggests that the archaeological terraces were indeed the loci of perishable structures.

Further evidence in support of this identification is found at Site 520, dating to Nasca 2 and 3. Here, a series of some six terraces descend the hillside. The terraces were massively looted, and looters may have found several burials, to judge from the scatter of barbacoa materials and some scarce bone. Thin strata of Nasca refuse (vegetal fiber, cane, maize, shell) are visible in the profiles of some of these looters’ holes. This suggests that the tombs were intrusive in a domestic context and that the terraces were originally habitation. On unlooted portions of these terraces I observed cleared areas measuring 3 by 2 meters that were delineated by fieldstones. These cleared, unlooted areas probably correspond to houses. Nevertheless, at some sites with terraces it is impossible to know, without excavation, if they were habitation and/or fulfilled another function.

Another ambiguity concerns the terraces within walled enclosures (as at Sites 165, 455, 552). The terraces may be ordinary or elite habitation loci. It also is possible that



3.2. A typical Nasca terraced hillside site.



3.3. Contemporary rural hillside settlement located off valuable valley bottomland.



3.4. A contemporary wattle-and-daub house erected on a fieldstone terrace foundation.

these are not domestic terraces but, rather, communal or civic-ceremonial areas or both. Theoretically, the issue may be moot: in terms of structure and function in a nonstate society, an elite habitation area and a civic-ceremonial site may be coterminous. Thus it is important to indicate that various sites were multifunctional.

Cemetery Sites

The category of cemetery ranges from single tombs to entire grave fields. All cemeteries recorded on survey have been looted (this is true of all phases and time periods). Indeed, burial sites are recognized by the disturbance caused by grave robbers: torn-up barbacoas, human bone, broken pottery, and other grave goods lie scattered around the looters' holes; sometimes prepared cists, typically circular in outline and made of fieldstones, are visible.

A major issue with the identification of cemeteries is the possibility that extreme surface disturbance by looters obscures domestic occupations, particularly if building materials were perishable, as would be the case with wattle-and-daub dwellings. At the multicomponent Site 175, for instance, traces of fieldstone walls were observed in looters' holes. They may correspond to prepared burial shafts, but they also may correspond to a habitation site destroyed by looters because the Nasca often buried their dead in settlements. When later Nasca pottery is found at a habitation site on whose surface there also is

early Nasca pottery, the later material could correspond to the burials intrusive in earlier Nasca living contexts. At Site 302 looters found burials at the south end of the site. However, as looters are wont to do (see Silverman 1993a: chap. 7), upon discovering burials, they continued their search, thereby destroying the habitation zone north of the burial area. Thus it is important to realize that not every looters' hole corresponds to a burial. Also, at various sites (for instance, Site 30), stone-lined storage pits appear to have been vandalized through looters' misinterpretation of them as tombs.

In various instances discussed in the following chapters, it was possible to identify Nasca burials intrusive in earlier Nasca habitation structures. In other cases, habitation sites had spatially separate cemetery areas. In yet other instances, discrete cemeteries (not directly associated habitation sites) occurred. In the field, in assessing whether looting was obscuring a domestic locus we were guided by the physical evidence. If floors or midden strata were not observable in looters' holes and if looting did not bring domestic remains to the surface, we assumed the context to be mortuary rather than habitation. Nevertheless, I emphatically state that looted surfaces are usually ambiguous. Therefore, excavation is needed to clarify the many uncertainties reported in this book. Indeed, this is my mantra: survey provides only an impression of subsurface reality and should be followed by excavations.

In his study of a sample of scientifically excavated and reported Nasca burials, Carmichael (1988: 185–193) cogently distinguished between different kinds of burials based on depth, form, and materials used. However, looting has so badly damaged Nasca burials that on survey it was often impossible to know the original depth of a tomb and/or its shape. I have modified Carmichael's terminology for this book in accordance with the burial contexts I observed in the field.

Barbacoa: The tomb roof, usually consisting of huarango logs and/or canes lashed with vegetal fiber rope, typically plastered over with mud (the *torta*) and frequently with pacay leaves sprinkled on top (see Silverman 1993a: figs. 14.7–14.10); it is important to indicate that the presence of a barbacoa does not necessarily imply a prepared (i.e., walled) cist or shaft.

Torta: A mixture, usually of mud, dirt, rocks, and adobe fragments, that is placed above the barbacoa or substitutes for it.

Urn burials: See Carmichael (1988: 194–195) and Silverman (1993a: fig. 14.4).

Pit: An *unprepared* hole dug in the ground that may be shallow or deep. Pits usually lack roofs but can, on occasion, have one. On survey, pits appeared to be the most common form of burial. In this study they are not encompassed by the term *mortuary architecture*.

Cist: A cylindrical shaft with parallel side walls of *prepared* architecture, such as adobe or fieldstone. They may be shallow or deep. They may or may not have a barbacoa. Cists are encompassed by the term *mortuary architecture* in this study.

Chamber: These are larger burial containers, typically square or rectangular in form. They are encompassed by the term *mortuary architecture* in this study. They typically have a barbacoa, though it may have become lost due to looting.

Civic-Ceremonial Sites

Civic-ceremonial is an admittedly overly general category. It encompasses discrete sites with public and/or ritual attributes or features. Habitation, if present, is dwarfed by the nondomestic attributes of the site. This definition distinguishes civic-ceremonial sites from habitation sites with encapsulated ceremonial functions.

Geoglyphs

Geoglyphs are, literally, “earth markings.” All the geoglyphs recorded on survey were made by a subtractive

process in which small surface rocks were cleared from an area and used to outline the lighter-colored subsoil revealed. Figural or biomorphic geoglyphs, as these are known on the Pampa, were not identified. Rather, the range of valley geoglyphs appeared to consist of single and multiple trapezoids, cleared fields (*campos barridos*), combinations of lineal features (such as a zigzag and spiral), straight lines, line centers (see, especially, Aveni 1990), and large complex arrangements of geoglyphs called major geoglyph fields (see Silverman 1990b).

Sites Lost to Destruction between 1944 and 1970 and between 1970 and 1988–89

I am confident about the comprehensive identification of sites in the upper valley because the upper valley is so narrow that habitation must have been largely restricted to the hillsides,³ and these hillsides do not appear to have undergone significant alteration beyond reuse for habitation. However, in the middle valley and, especially, in the lower valley and middle Grande there has been significant site loss due to agricultural expansion. This can be seen by comparing the 1944 SAN aerial photographs with the 1970 series and the latter with ground reality in 1988–89 when survey was undertaken. I believe that most site destruction took place in the middle of the twentieth century, when large-scale, mechanized, industrialized agriculture was introduced. Thus the 1944 aerial photographs are a reasonable baseline inventory of archaeological sites. Comparison of the two series of SAN aerial photographs (1944 and 1970) is therefore important.

For instance, at La Legua the great Inca administrative center of Tambo de Collao is readily visible in the SAN 524-99 photograph from 1944 but was destroyed before 1970 (the site nevertheless received a number as Site 177). In the middle valley a trapezoidal geoglyph on the north side of Site 180 (see SAN 524-59) had been destroyed by 1970. Also destroyed was a major field of geoglyphs between Site 446 and the modern settlement of Tulin (SAN 524-72). A large terraced habitation site, immediately west of Site 332 and above it and Site 333 (see SAN 524-59), has been practically obliterated; its minimal surviving remains were registered in 1989 as Site 476. In addition, a large walled compound in the mouth of the quebrada immediately east of Sites 459 and 460 (SAN 524-74) was totally destroyed; on the aerial photograph it is much larger than Site 459. Another large walled compound in the mouth of the quebrada immediately east of Site 166 (SAN 524-72) also was destroyed.

As elsewhere in Peru, so, too, in the lower Ingenio Valley sites continue to suffer destruction as arable land expands in this relatively wide stretch. In addition, valley bottom sites probably existed in this area and were lost centuries ago through earlier agricultural expansion and alluviation caused by the annual flooding of the river.

Coverage in the 1944 aerial photographs of the north bank of the lower valley is not good for archaeologists because the photos are cropped to hug the arable land. In the field it was clear that north bank destruction extends from La Legua to Site 216. I suspect that many geoglyphs were destroyed along the north side of the lower valley (this is the south side of the Pampa de Piedras Gordas, which was a major geoglyph zone).

On the south side of the lower valley, sherd scatters in bulldozed fields were recorded where the 1944 aerial photographs showed the prior existence of sites. One sherd scatter may be what remains of a more-or-less agglutinated settlement composed of smaller and larger square structures—possibly houses—around walled patios (SAN 524-107; registered as Site 234). A rectangular or trapezoidal enclosure (?) (SAN 524-107; registered as Site 235) also had existed. A major planned multiroom rectangular compound (SAN 524-106; registered as Site 236) had been nearby; one of the Site 483 geoglyphs (also destroyed) pointed and extended to the corners of the south wall of this building.

The situation along the west side of the middle Grande is problematical and impeded by the poor quality of the aerial photographs for this area. Already by 1944, whatever might have existed had been largely destroyed down to Site 315, a major geoglyph field. After 1944 a grove of huarango trees was planted between Site 315 and the edge of the valley, but nothing is visible in this space on the 1944 aerial photographs. A group of Nasca and Middle Horizon sites (Sites 296, 297, 298, 299, 321) cluster immediately to the north of the Santa Cruz–Grande River junction. South of the junction a line of sites dating to various periods has been identified. Presumably, they have survived because the hills are so close to the valley edge that there has been no room for agricultural expansion here.

Although potsherds usually were found in the areas formerly occupied by disappeared sites, I have been hesitant to attribute the sites, visible on the earlier aerial photographs, to a particular period on the basis of ceramic materials in bulldozed fields. These sites are treated as “date unknown” and “function not relevant.”

Ingenio–Middle Grande Sites Identified by Strong

Strong (1957: table 1; Columbia University field notes) identified six sites in the Ingenio Valley of which four were labeled Nasca cemeteries. Strong’s field site 16 is said to be a cemetery located at “La Ventilla . . . directly across highway from Hda. San Pablo, just before entering green valley bottom, when coming north from Nazca.” At this site Strong’s project observed “unlined circular tombs dug in rocks and sand and at least one large rect adobe tomb” and “in flat toward river outlines of large rooms of small stone construction. Only plain wares associated” (Columbia University field notes). The textual site location, the location shown on Strong’s (1957: fig. 1) map, and the remains described suggest that the site Strong recorded may be one excavated by Giuseppe Orefici that my project registered as Site 180.

Strong’s field site 17 is a Nasca cemetery on the north side of the Ingenio River in the middle valley. Strong’s project observed a “cemetery and large rectangular rooms outlined on surface by rough stones” (Columbia University field notes). Nasca and “Epigonal ?” pottery was found. At the time of Strong’s survey, the “whole area [was] being brought under irrigation” (Columbia University field notes). I believe this site had been lost by the time of my survey.

Strong’s field site 18 is described as a Nasca cemetery “directly behind (No.) of town of Ingenio” (Columbia University field notes). Strong’s (1957: fig. 1) map shows it on the north side of the river in the middle valley. Strong’s project recorded “tombs directly in rocky soil. Unlined. Nazca ceramics only . . . Large rubble wall partly encircles graveyard, has a small added extension” (Columbia University field notes). The original site description indicates that the site was located in the vicinity of my project’s Sites 441, 442, 443, and 444. At the time of my survey this area had been severely altered by earthmoving activities, and I cannot specifically identify Strong’s site.

Strong’s field site 19 was recorded as a “Late Nazca and Chincha cemetery. Graves dug directly in ground—no lining seen” (Columbia University field notes). The site was located on the north side of the river on a hillside in the middle valley. By its location on Strong’s (1957: fig. 1) map, the site is west of my Sites 441, 442, 443, and 444. It is possible that this is my project’s Site 454, at which Nasca and LIP pottery were recovered and no tomb architecture was observed.

On survey Strong’s (1957) Tres Palos I site was reiden-

tified as Site 489. Tres Palos I was described in Strong's October 19, 1952, field notes as

a main right angle platform, upon which are the major portion of the stakes, and an outer more irregular shaped terrace roughly rounded and looks like natural terrace which has been reshaped to fit into building pattern. Loaf shaped adobe walls outline the platform and probably outer terrace also. Other rooms of same type adobe walls also present at site. There are 13 rows of stakes running in an E-W direction and there is from 1–12 remaining stakes in each row. No row has all its stakes—must have been more than 12 stakes in each row. There is c 1.5 mts between each stake and there are 51 remaining stakes on the platform area to the east of the road. Only complete stake at the site is 3.5 m high and 50 cms in diameter.

However, the site is in significantly worse condition than when Strong recorded it. In 1989 we observed a total of only a dozen posts in six rows. Furthermore, the loaf-shaped adobe walls were no longer visible, but only a few such adobes were strewn about the surface. We did observe that the main terrace of the site was created by filling and leveling the hillside by means of a vegetal fiber fill composed of maize husks (*chala*) and interwoven canes tied with fiber rope.

I was not able to identify Tres Palos II on survey. I am convinced it has been destroyed through severe earth-moving alteration since Strong's time. Strong's field notes argued that Tres Palos I and II were a single site and that although no pottery was found with the Tres Palos I "wooden-stake temple" (Strong 1957: table 1) it should be contemporary with Huaca del Loro, Estaquería, and Tres Palos II, which have main occupations dating to Nasca 8/Loro. On survey, we thought Early Middle Horizon pottery dominated the few diagnostic potsherds on the site surface.

The Site Distribution Maps (SDMs)

I have discussed the conflicting paradigms and practices of Western cartography versus indigenous landscape (see chapter 1). Nevertheless, there is a reality to site location. Sites and places do exist in geographic, topographic, and physical space, and sites can be plotted. The SDMs for Nasca 1–8 (see CD: SDMs 5.1–12.5) show the distribution of all Nasca sites by site types.

I have adopted a graphically liberal and textually conservative approach in this book to the dating and inter-

pretation of site occupations for the reasons explained above. The site distribution maps present a best-case scenario for the identification of Nasca sites, an optimistic and literal reading of site surfaces as they were recorded and collected. These maps represent as an occupation all sites with Nasca pottery, irrespective of quantity. But I indicate to the reader that sites with even the most minimal surface pottery have physical evidence of habitation and/or burial and/or civic-ceremonial activity and/or geoglyphs. The problem is in the association of pottery with these remains: evidence of human activity is quite visible but not always readily dated. The textual analysis of the site distribution maps lumps, highlights, and eliminates sites so as to present what I consider to be the best fit of surface evidence for the interpretation of site date and site function.

Also, as indicated above, I have maintained the site functions discrete on these maps rather than creating functional site hierarchies represented by, for instance, triangles for large habitation sites with encapsulated civic-ceremonial features, squares for small habitation sites, stars for major civic-ceremonial sites, and so on. I have done this for the many reasons explained in chapter 1. My theoretical position and analytical decision have resulted in the need to accommodate the hundreds of discrete SDMs on a CD. The reader is free to reach his or her own conclusions and to rework the base map (fig. 3.1a) and the SDMs.

Notes

1. Note that Tello (1931) included the middle Grande tract as part of the Ingenio River Valley even though technically it is not. In table 3.1 and throughout the rest of this book, site locations in the Ingenio and middle Grande Valleys are distinguished by the bank of the river on which they occur. As discussed in chapter 2, the Ingenio River flows essentially east-west, and sites occur either on the north or south side of the river. The Grande River proper trends north-south over its almost 120-kilometer length. Therefore, sites in the middle valley are described as being either on the south/east or north/west side of the river.

2. Site 25 on SAN 175-70/2770 is a good example. On SAN 175-70/2765, Sites 33 and 35 were probably a single Nasca 1 site separated by a huaico, with LIP Site 34, above, being created after the quebrada was in existence.

3. Colonial Period sherds were observed in a deep cut at Molino, at more than three meters below the surface.

Site 165

Site 165 (fig. 4.1) is potentially one of the most important of the ancient settlements in the Ingenio Valley. Cahuachi and Site 165 are connected by a trans-Pampa line that departs from above the western edge of Site 165 and passes by the eastern extreme of Cahuachi (Silverman 1993a: fig. 23.1). I have previously suggested that it may be appropriate to call Site 165 “urban” and that it may have acted as “the ‘urban’ capital of the early Nasca social formation,” with Cahuachi being the “religious” capital, that is, a model of dual capitals of the early Nasca social formation (Silverman 1990b: 439, fig. 5, 1993a: 326). My characterization of Site 165 as urban may have been premature (actually, it was an overenthusiastic reaction to the major agglutination of habitation terraces there in contrast to Cahuachi’s unexpected lack of such foci). But, certainly, Site 165 has residential density. In my early evaluation of the site I also was influenced by Urton’s (1990) reconstruction of late prehispanic moieties in the Río Grande de Nazca drainage that were divided by the Pampa. I also considered the very different basis of irrigation agriculture to the north and south of the Pampa (typical coastal irrigation vs. filtration galleries, respectively). Excavation is needed at the fascinating Site 165 in

order to ascertain its relationship to Cahuachi and its nature, evolution, and role in the Nasca occupation of the Ingenio Valley.

As seen on the 1944 (SAN 524-97, 96, 59, 58, 57, 56, 55) and 1947 (SAN 9-10-47: 2558-445) aerial photographs, Site 165 was a large agglutinated settlement that stretched along the hills bordering the south side of the middle valley between Site 80/Quebrada El Fraile and the tiny modern settlement of Ventilla (see IGN: Palpa, 30-m). Site 165 covered at least one hundred hectares, though the field measurements of the surviving component sectors sum up to only thirty hectares (see CD: spreadsheet 4.1). The difference in measured size and true size is due to the massive destruction suffered by the site. The sector measurements are points of reference only, permitting comparison of the diachronic growth and decline of this site to others noted in the text.

On the basis of surface evidence, Site 165 is one of the most difficult sites with which to deal because between 1944–1947 and 1970 the site was virtually destroyed by mechanized earthmoving activity related to agricultural expansion (already visible in the earliest aerial photographs). The site is imperceptible on the 1970 SAN series



4.1. Site 165 in 1947 (SAN 2558-445). Originally published in Silverman 1990b: fig. 5.

(photos 2724, 2725, 2726). By the time of survey, Site 165 was covered with a dense forest of desiccated trees and was largely destroyed.

The three survey teams spent one week amid skin-ripping thorns to document the surviving architecture of the site and to collect diagnostic pottery by the identified sectors. Survey suggests that there is a major Nasca occupation at the site (see figs. 5.24, 7.1, 9.13), in addition to whatever later occupations exist (CD: spreadsheet 4.1). On survey, all archaeological areas were recorded as sites. Site 165 is the analyzed composite of these original site numbers, which are described below as sectors (fig. 4.2).

The Sectors of Site 165 Moving East to West

423: This is a trapezoidal geoglyph that maintains a uniform width of 8 meters for most of its 180-meter length; it widens slightly only at the base.

422: Six levels of fieldstone terraces are discernible. The best-preserved terrace appears to be split-level on a single terraced level. In other words, the western terrace is 1.40 meters lower than its eastern half, and that half is set back to the south of it.

418: This is an 8-meter-wide access route to the Pampa. The route connects to a trapezoid on the Pampa that runs southeast toward Cerro El Fraile. By ascending this wide route one would have arrived at this geoglyph. Along the route there appear to be two deliberately flattened terraces or platforms.

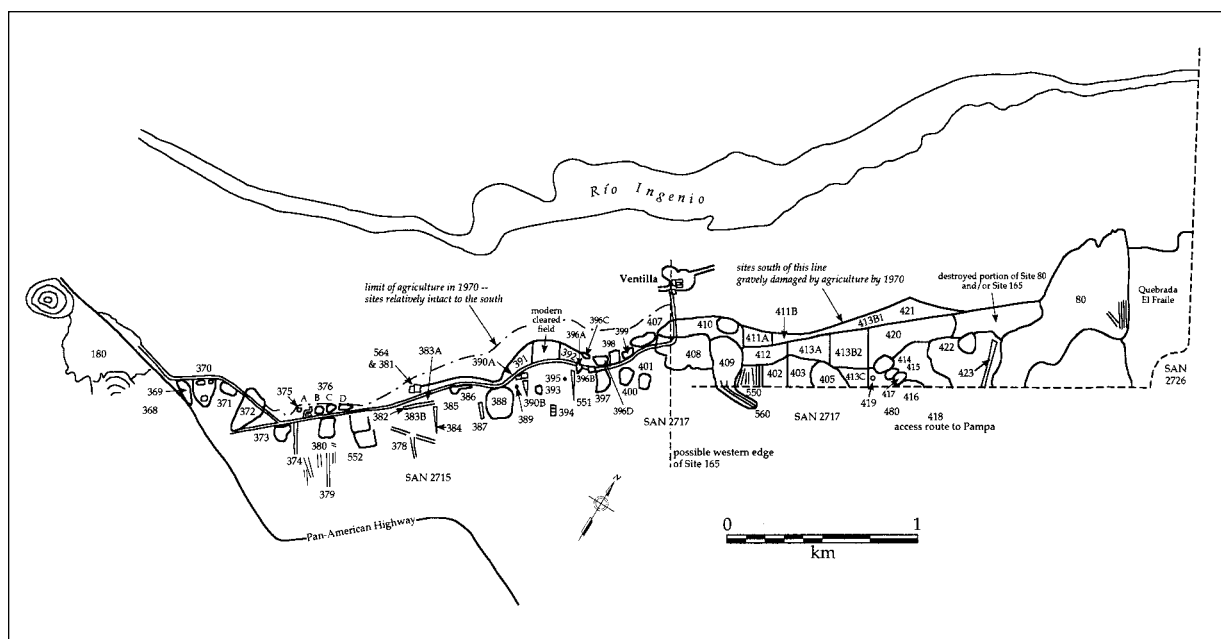
480: This is a rectangular fieldstone structure measuring 5.50 by 9.50 meters. It is nestled on the base of the spur on top of which the Site 165/418 access route to the Pampa is located. The structure overlooks the Site 165/417 geoglyph field. The structure is defined by a single course of fieldstone walls. The back (south) wall of the structure must be a major contention wall, but it is not visible.

416: This consists of two geoglyphs: a spiral and a trapezoid. The spiral has a diameter of 18 meters and is composed of eight concentric rings. The trapezoid measures 5 meters at its narrow end, 11.50 meters at its wide end, and 68 meters on each side. It is oriented southeast-northwest. Its northwest tip just touches the spiral.

417: This is a small field of lineal geoglyphs that criss-cross each other.

415: This is a rubble ridge contained by a double-faced wall of angular fieldstones. It is oriented 30 degrees east of north. It is 31 meters long, 1.80 meters wide, and 90 centimeters high. The building material for the wall appears to have come from the areas immediately to the north and south, which have been cleared for a width of 10 meters (visible on the 1947 aerial photograph). Both Nasca 1 and Colonial pottery appear to have been swept up. Thus the wall should be at least as recent as the Colonial Period; the prior Nasca use of this area is unknown.

414: This is a large enclosure whose function is unknown and whose date is uncertain despite the predominance of Nasca pottery recovered within. The enclosure



4.2. The numbered sectors (originally discrete site numbers) of Site 165, also showing those sites now considered not to be part of Site 165. Plan is derived from the early SAN aerial photographs.

is an irregular rectangle with a single larger southern section (50 by 46 by 40 by 46 meters) called Sector A and an adjacent, smaller, unequally divided northern sector, whose north side is badly damaged, called Sector B.

The south wall of Sector A is 70 centimeters wide and is composed of fine cut stones (*lajas*). The west wall is 90 centimeters wide. The north wall is 70 centimeters wide, and it is this wall that Sector B abuts. The east wall no longer exists; rather, it is a flattened pile of rocks. The area within this enclosure has been cleared. A very scarce quantity of sherds of multiple date is present.

The medial wall of Sector B is low and composed of rubble; it does not have a face on either side, and the rock fall is 4 meters in width. That wall creates two areas whose measurements are estimated as 30 by 10 meters and 30 by 20 meters. A few looters' holes are present in Sector B, but only one of these is a prepared cist. That cist is square and outlined by fieldstones; it measures 85 by 77 centimeters.

419: This is a trapezoidal geoglyph measuring 4.30 meters at its wider end, 2 meters at its narrow end, and 42 meters on either side. It is oriented almost north-south.

420: Sector A consists of perhaps four terraces that drop steeply down to the major Sector B enclosure. The best-preserved terrace is a flat surface 12 meters wide. Although the contention walls of the terraces are no longer visible, they must be massive and high, for there is at least a two-meter drop from one terrace to the next one

down. One stone mortar was seen. There was no pottery in this sector.

Sector B is an enclosure within which are traces of fieldstone walls and lower and higher areas that are interpreted as small platforms and patios. The south and east walls are still preserved. Both are double-faced with a medial wall between the two outer walls. The walls are built of river cobbles and fieldstones with a rock rubble core. The rocks are large: from head size to basketball size. The south wall is 80–90 centimeters wide and has a preserved height of 1.70 meters; given the rock fall, it would have been higher in the past. The wall runs for at least 178 meters. The east wall is 80 centimeters wide and has a preserved height of more than 1 meter. It runs for 36 meters. The area between the south and east walls, to the east of the Sector G mound, is a raised platform that is 1.30 meters higher than the level below to the north. One piece of *Spondylus* and Nasca 1, 3, and 5 sherds were recovered from Sector B.

Sector G is an L-shaped mound in the southeast portion of the Sector B enclosure; it is adjacent to the south wall of the enclosure but separated from the east wall by 19 meters. The mound measures 28 by 7 meters. At least two construction phases can be distinguished. In the earlier one there are containment walls of fieldstones and river cobbles set in mud mortar. These walls have a revealed height of 1.10 meters and are plastered with the same mud in which the rocks were set; the mortar con-



4.3. The Site 165/420 Sector D small mound.

tains abundant pebbles. The later construction phase is a construction fill of dirt and rocks. The surface of the mound is badly looted, but there are no bones and no evidence of tomb architecture. Nasca 1 pottery has been brought to the surface by looting.

Sector C is a square area enclosed on four sides by low mounds. These mounds are composed of dirt and rock rubble contained by fieldstone walls with no evidence of mortar; the best preserved of them rises 90 centimeters above the surface of the enclosed area. The mound surfaces have been looted. Only MH sherds were recovered.

Sector D is a small mound, 11 by 16 meters, that is almost 4 meters high (fig. 4.3). Three or four looters' holes are present, but there is no evidence of tombs. Nasca 5 and unphaseable Nasca potsherds were recovered in addition to one LIP sherd.

Sector E is a badly damaged mound that today is 2 meters high and 4 meters wide. It appears to have been built of rock and dirt. There are traces of rooms on the east side of the mound, but these are too destroyed to comment on.

Sector F is a square enclosure, almost totally destroyed (fig. 4.4). Its west wall and north-south medial wall are still preserved to a height of 1.50 meters. The walls may have been double-faced, and wall width may have been

90 centimeters. Walls are made of river cobbles and fieldstones. The interior of the enclosure is totally destroyed, and no cultural remains were observed.

A section of wall is still preserved in the Sector J mound. The construction technique is fieldstones set in mud mortar (fig. 4.5).

421: The site consists of three badly looted adobe mounds. Mound A measures 14 by 20 meters. Looters' holes reveal sections of adobe wall and layers of chala. Mound B is connected to Mound A's northwest corner. Mound B measures 12 by 25 meters. Looters' holes reveal solid sections of adobe covering a core of naturally occurring angular fieldstones. Mound B is separated from Mound C by 15 meters, forming a rectangular plaza between the two mounds. Mound C measures 33 by 13 meters with a rectangular annex mound on its northeast side that measures 17 by 10 meters. Its preserved height is 2 meters. A stone containment wall, made of river cobbles of varying sizes and angular fieldstones set in mud mortar, was observed below an adobe wall. This stone wall has four courses of masonry visible to a height of 60 centimeters. The adobes of the adobe wall are set in mud mortar; this mortar contains rocks up to 10 centimeters in diameter. Other adobe walls were observed and may form rooms, but the mound is too looted to permit a



4.4. Part of the Site 165/420F square enclosure, almost totally destroyed.



4.5. A section of wall in the Site 165/420J mound. The construction technique is fieldstones set in mud mortar.

definitive assessment. All pottery was Nasca 1, 3, and 5 plus two MH sherds at Mound B.

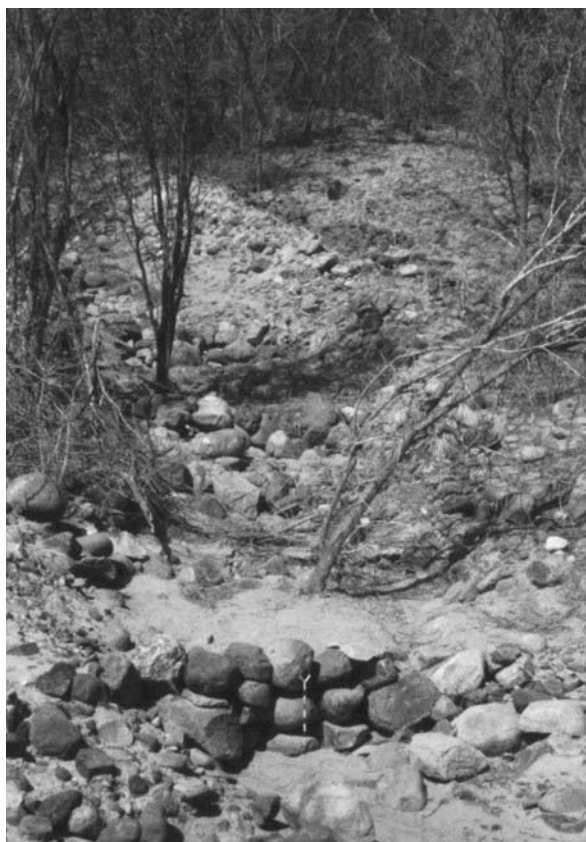
There are two walls to the east of the three mounds, but no pottery is associated. Their relationship to the mounds is unknown.

413: Sector A is a major enclosure built of double-faced walls of large subangular and irregular fieldstones and river cobbles. The walls have a central rock core, which gives the impression of a medial wall. The north wall of the enclosure has been destroyed. There are 24 meters of the east wall remaining. The west wall is preserved for 27.50 meters and is 1 meter wide. The south wall is preserved for 80 meters to a height of 1.50 meters above surface level, but the large amount of wall slump indicates that it was once much higher. Within the enclosure there are terraces defined by fieldstone walls; these are not laid in regular courses of masonry. The rocks vary in size from 11 by 4 by 8 centimeters to 26 by 13 centimeters. The terraces are destroyed by looting and by the former cultivation. There also are short alignments of single rows of fieldstones here and there within the enclosure. The Nasca sherd collection includes panpipe fragments.

Sector B is not as well preserved as Sector A because it is directly in the path and mouth of a quebrada and because a modern road runs through it. B1 is a heavily looted area amid the dead bush. The looters' holes do not reveal tomb architecture or skeletal materials, but there is a significant amount of Nasca pottery. In the area called B2 there is a low (1-meter-high) rubble mound, measuring 14 by 7 meters, whose nature is unknown. There are a few shallow looters' holes revealing pieces of large, well-made LIP utilitarian vessels. There are few sherds on the surface of B2 because water has run over the surface, creating a blanket of hard silt. In one looters' hole the intersection of two cobblestone walls was observed; the cobbles are set in mud mortar. There are remains of Colonial botijas in this sector; they come from the lower hillslope on the west side of the quebrada and are identical to the Colonial pottery observed surrounding a Colonial building (Site 531) on the edge of the Pampa, above Sites 408 and 409. A fragment of a Nasca double-spout-and-bridge bottle and panpipe fragments were recovered in this sector.

Sector C consists of a series of cleared areas that descend the quebrada and are interpreted as terraces.

405: The uppermost portion of the sector is preserved because it is high enough up the hillside not to have been destroyed by agricultural expansion. Between the quebradas on the strongly sloping hillside there is a series of four or five short terraces (3.50 by 3.50 meters) on the



4.6. Three levels of fieldstone terraces on the Site 165/409 hillside.

west side. Just above the canal and bramble two broad terraces curve all the way around the contour of the hill. They measure 31 by 8 meters and 10 by 52 meters with contention walls that are 4–5 meters high. The sector is looted, but there is no evidence of tombs.

403: There were terraces here, but they can no longer be seen because of huaicos.

402: Poorly preserved fieldstone terraces descend the hillside. The terraces have been damaged by huaicos and a modern irrigation canal. The best-preserved terraces measure 4 by 17 meters. Other terraces are shorter fragments. The top of one fieldstone contention wall can be seen. An average fieldstone measures 47 by 35 by 25 centimeters.

412: This area is totally destroyed, but structures are visible on the earlier aerial photographs.

411: There are two areas of looting, without skeletal material. In Sector A the remains of a surface wall made of river cobbles, 15 centimeters wide, also were observed. One of the Nasca sherds in this sector is a panpipe fragment. Sector B is without visible architecture.

409: There are three levels of fieldstone terraces on the hillside (fig. 4.6). At the base of the hill there are small



4.7. It is possible that Site 80 was originally the eastern edge of Site 165. Unfortunately, by the time of this early aerial photograph (SAN 524-55 from 1944), the area that may have connected the archaeological remains was already destroyed, as seen in the dark area corresponding to cultivation (note Site 81 to the east of Quebrada El Fraile).

areas delineated by accumulations of rock. In one of these the remains of a river cobble wall are visible.

550: This is a field of lineal geoglyphs between the 409 and 402 habitation loci.

560: This is an unusual bent trapezoidal geoglyph.

410: This is a roughly circular area of intensive looting. Parallel huarango trunks (the remains of the barbacoas) covered with mud (the torta) are still visible in the looters' holes. Among the Nasca sherds collected was a pan-pipe fragment.

408: No architecture was observed amid the desiccated trees. However, on the aerial photograph traces of architecture can be seen but are unclear because of a fingermark on the original photographic print.

Geographical Delimitation and Spatial Organization of Site 165

I delimit Site 165 in terms of the sectors described above. Site 165 consisted of areas of contiguous terraces (422,

420, 413A, 413C, 405, 403, 402, 412, 409, 408), walled enclosures (480, 420, 413A), routes of easy access connecting the aforementioned zones to the Pampa immediately above (e.g., 418), several small hillside geoglyphs (560, 550, 419, 416, 417, 423), cemeteries (413B1, 411A, 411B, 410), mounds (420, 421, 413B2), and areas of unknown nature (415, 414). It is possible that Site 80 should be included within Site 165, but there is enough of a physical gap in habitation (possibly caused by the destruction of remains) to make me hesitate (fig. 4.7). Nevertheless, even my conservative delimitation of Site 165 reveals it to have been one of the largest and most complex sites in the Ingenio Valley for any prehispanic period.

Temporal Parameters of Site 165

Only excavation will definitively reveal the occupational history of Site 165. Until that time, survey data (field observations, surface collections) must guide us. I conclude that the primary occupation of the site is Nasca, that the

Nasca occupation is multicomponent, and that there are later occupations at the site (particular areas of the site were reused in the Middle Horizon and Late Intermediate Periods; there is a minor Colonial Period presence).

On the basis of surface collections, the most intense occupation of the site occurred in Nasca 1, 3, and 5. Nasca 2 is represented, but not to the degree of the preceding and succeeding phases. There was a major decline in occupation in Nasca 4. After Nasca 5 it is no longer appropriate to speak of a Site 165. The Nasca 1 through Nasca 5 occupations are analyzed in the respective phase chapters. Late Nasca pottery occurs in a very few, spatially discrete loci referred to by their original field numbers.

West of Site 165

When taken as a temporal composite, there is a significant and fairly continuous Nasca occupation between

modern-day Ventilla and Site 180. This could create a Site 165 double the size of that which I am proposing in this volume (see Silverman 1993a: 324). However, to the west of Site 408, the agglutination of Site 165 is no longer seen. Therefore, I have decided not to include this stretch of sites as part of Site 165. Nevertheless, summary data on the sites I consider to be west of Site 165 are provided on the CD on spreadsheet 4.2 and its accompanying text (see CD: supplementary site descriptions: sites west of Site 165) so that the reader can reach an independent decision as to where to delimit Site 165 in each phase of its occupation.

Nasca 1 Settlement Patterns in the Ingenio and Middle Grande Valleys

Nasca 1 is the most easily (unambiguously) identified Nasca phase because of its particular attributes (see discussion and illustrations in Menzel, Rowe, and Dawson 1964: 251–256; Silverman 1993a: 231–238, fig. 3.2; Strong 1957: 18–24). Nasca 1 sites and sites with Nasca 1 pottery are present at 167 sites throughout the survey area (see CD: SDM 5.1). These sites are identified as habitation sites; habitation sites with cemeteries; habitation sites with civic-ceremonial areas; habitation sites with cemeteries and civic-ceremonial areas; habitation sites with civic-ceremonial areas and geoglyphs; habitation sites with cemeteries, civic-ceremonial areas, and geoglyphs; cemeteries; civic-ceremonial sites; sites composed of cemeteries and civic-ceremonial areas; geoglyphs; and sites whose function in Nasca 1 times is unknown (CD: spreadsheet 5.1).

SDM 5.2: The Setting, Location, and Spacing of Nasca 1 Habitation Sites

Upper Valley

In the narrow upper valley, hillsides border the valley bottom, and habitation sites are almost always accom-

modated to the valley-facing slopes so as to conserve scarce agricultural land. There is an additional minor pattern in which huaicos within quebradas are chosen for habitation.

Habitation sites are found on both banks of the river. The location of sites on one side or another of the upper valley appears to reflect a desire for placement above the wider tract of land, although there is easy crossing to agricultural land on the opposite bank, since the river does not carry water year-round.

Habitation sites are spaced fairly regularly in the upper valley in apparent accordance with the ethnographic location of pukios (CD: Nasca 1 pukios: map, text). This suggests that this water regime was operative in the past.

Middle Valley

In the middle valley, habitation sites tend to cluster in pockets, if, indeed, these clusters are not actually territorially large single sites (in this regard, the possible divisory distortion caused by quebradas must be noted: see chapter 3). The clusters and discrete single sites are clearly seen on Section 3 of SDM 5.2 (see CD).

The absence of habitation sites between Hornilla (where Site 140 is located) and Mongo (where Site 367 is located) is due to the near vertical face of the hills that edge the north bank of the valley at this point. Sites also are absent for the stretch along the rugged south bank between Sites 152 and 347 except for Sites 149 and 150, which are multicomponent Nasca cemeteries. Local people speak of a possibly ancient *cocha* (reservoir) fed by a *pukio* just below Sites 149 and 150. Habitation resumes at Sites 367 and 347, precisely at the Mongo *pukio*, which is also where the terrain becomes more hospitable for settlement. It is also relevant to cite ONERN's (1971: 203) observation that water salinity increases gradually downstream from San José, leaving only small sources of sweet water.

Lower Valley

It is very interesting that in Nasca 1 times there is no concern with the angostura at La Legua as a strategic location, whereas there is an immense LIP occupation there. The Nasca 1 occupation of the angostura appears to be an unimpressive collection of cemeteries and minor ceremonial foci on both banks of the river.

There is a dramatic paucity of habitation sites in the lower valley. Only one Nasca 1 habitation site has been identified, Site 220, at the west end of the lower valley. I believe that this situation is not a true reflection of the ancient settlement pattern. Rather, I hypothesize that settlements were located in the valley bottom on land that was subsequently farmed and annually flooded, thereby destroying and burying the sites. Supporting this suggestion is the presence of Nasca 1 burials at Site 228 in the lower valley. Today the site is an isolated cemetery. Its location is understandable if there were people living in the valley bottom but burying their dead off economically useful land.

Middle Grande

Few habitation sites were recorded in the middle Grande, probably because a number of archaeological sites were destroyed by agricultural expansion or buried under alluvium in the wide valley bottom here. It is possible that many habitation sites in the middle Grande were located in the valley bottom.

There is a significant topographic difference between the two banks of the middle Grande Valley that could have caused the distinct cultural patterns of land use observed on survey, as indicated below. The crumpled and dissected hills of the west side of the middle Grande are

today an average of 400–600 meters from the current limit of agriculture and could have been more distant from the valley bottom before the expansion of agriculture. On the east side of the middle Grande a steep river terrace abuts the valley bottom.

To judge from the 1944 aerial photographs and field verification, the west bank of the middle Grande Valley was used for the elaboration of geoglyphs and, to a lesser degree, burials, with large tracts apparently not used at all. The exception to this characterization is the area immediately north of the junction of the Santa Cruz and Grande Rivers, where an important Nasca 1 site, Site 297, is located.¹ In Nasca 1 times there also is a minor interest in the junction of the Grande and Nazca Rivers as seen by the Site 487 habitation site.² A more intense and more varied settlement pattern developed on the high terrace of the east side of the middle Grande Valley with habitation, cemetery, civic-ceremonial, and geoglyph sites (Section 5 of SDMs 5.2, 5.3, 5.4, 5.5; see CD).

Kinds of Nasca 1 Habitation Sites

In addition to distribution, Nasca 1 people created different kinds of domestic habitats in terms of appearance and spatial organization. In Nasca 1 and subsequent phases, Nasca domestic architecture varied in accordance with locally available raw materials. Fieldstone, river cobbles, wattle-and-daub, and sedimentary rock all were used in construction. No habitation site appears to have had architecture beyond the ability of its families to construct easily.

Simple Terraced Fieldstone Habitation Sites

The majority of Nasca 1 (and subsequent Nasca) habitation sites consist of artificially leveled hillsides whose contention walls more or less closely followed the natural topographic contours (see, for example, fig. 5.1). Contention walls of these terraces are preserved to a height of 75 centimeters to 1.50 meters, on average. They are usually constructed of naturally occurring angular fieldstone, of large and/or small size (fig. 5.2). Rarely, as at Site 160-161, the contention walls are built of boulders chinked with small fieldstones. Quality of contention walls varies, as does the number and size of terraces (table 5.1). Rarely, habitation sites were elaborated over a sloping flat bluff or natural terrace, without the creation of an artificially terraced hillside—at least there are no visible terraces.



5.1. Site 21. Theodolite map. Terraces closely follow the natural contours of the hillside. Circular and irregular fieldstone structures are more or less agglutinated in accordance with the amount of horizontal surface available.



5.2. Contention wall at Site 465. Large rocks alternate with small ones.

TABLE 5. 1. Terrace Measurements from a Sample of Nasca 1 Habitation Sites

<i>Site</i>	<i>Sample Terrace Measurements (in meters)</i>
1	5 by 2.50
32	7 by 3
40	20 by 2–4
70	22–26 by 7
87	24 by 13
127	10 by 5
161	10–11 by 9
220	25 by 6, 9 by 4, 8.50 by 3.50, 3.30 by 2.70, 2.50 by 2
356	20 by 5
397	26 by 16.50, 26 by 7, 20 by 6, 7 by 4.50
443	10 by 3
465	10 by 1.70

Agglutination

Terraces and the structures on them may be contiguous, forming an agglutinated site (e.g., figs. 5.3, 5.4). Or terraces and structures may be more dispersed, as at Site 35 (fig. 5.5). Terraces may be more and less agglutinated in accordance with the amount of horizontal surface available.

Structures at Terraced Habitation Sites

Structures are present at some of the terraced hillside sites (Sites 1, 9, 21, 32, 40, 43, 47–52, 48, 63, 73, 87, 105, 114, 347, 401). At some sites circular, ovoid, rectangular, square, and irregular structures were noted on terraces and may co-occur at the same terraced site. When a large terrace is not subdivided, I interpret it as a communal open-air area (a patio) rather than a residential locus.

Small, circular, and/or ovoid fieldstone cists, measuring from 70 centimeters to 1.50 meters in diameter, occasionally were observed on terraces (e.g., Sites 63, 71, 104, 363, 397?, 401) or inside or adjacent to presumed habitation structures (e.g., Sites 9, 43; fig. 5.6). They are interpreted as storage silos because they are not looted and no bone lies scattered around them.

At Site 32 there are circular fieldstone structures, 3–5 meters in diameter, with entrances on their east sides.

At Site 40 square and rectangular fieldstone structures occur on some of the six levels of terraces; the structures are built of double-faced walls, 1 meter in width.

Site 43 (figs. 5.3, 5.4) is composed of an agglutination of fieldstone architecture forming small, roughly square structures that are presumed to be houses and larger fieldstone-defined spaces that are presumed to be patios. Divisions within a structure are created by low single or double-faced fieldstone walls.



5.3. Site 43. Theodolite map.

At Site 47, isolated, small (2 meters in diameter), circular, and square (with rounded corners) fieldstone structures are present on the five well-made fieldstone terraces conforming the site.

At Site 63 there is an agglutination of rustic circular and ovoid structures (5 meters in diameter) made of boulders rather than the usual fieldstones.

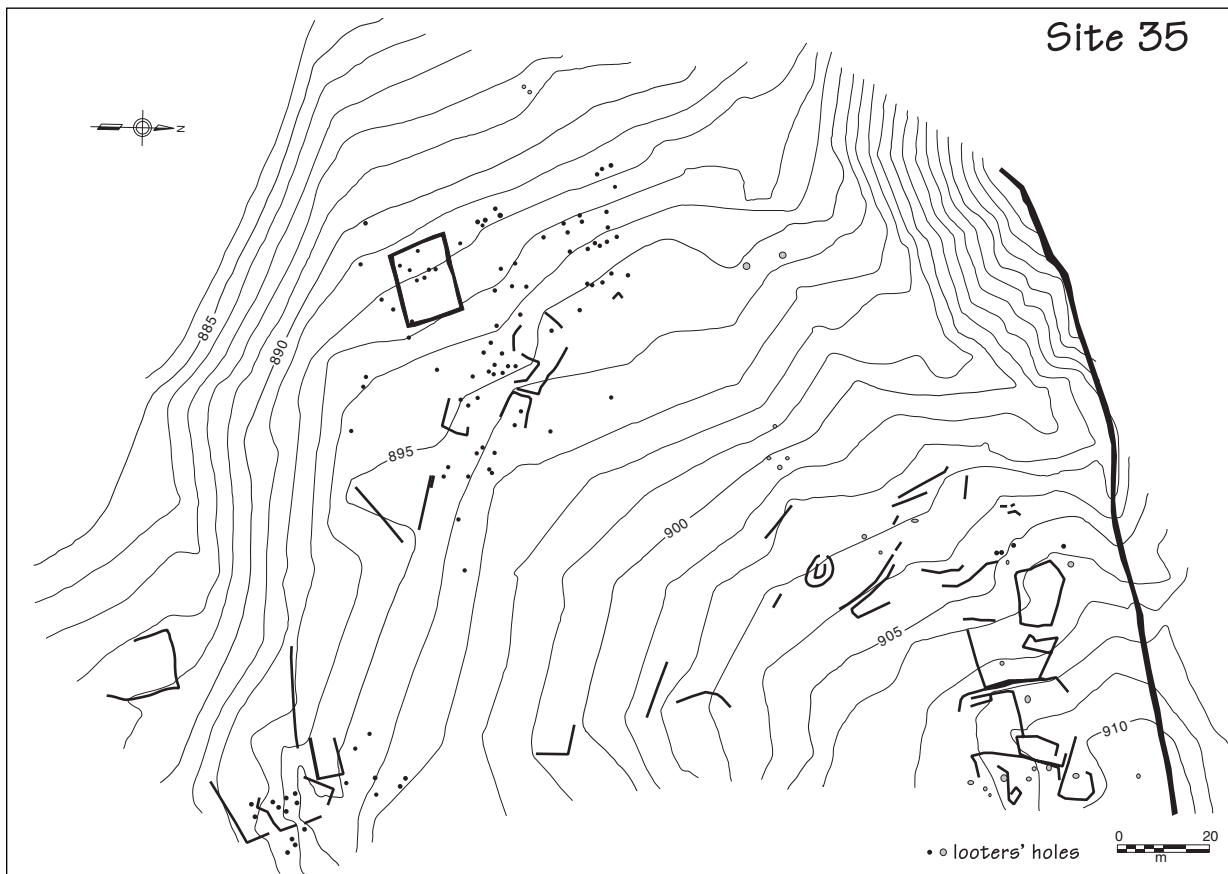
Site 73 is an ordinary terraced habitation site with circular structures and a minimum of five rectangular fieldstone structures (12 by 8 meters to 16 by 11 meters in size; one of these has internal subdivisions) built of triple-faced fieldstone walls (1.60 meters wide). At least two of the rectangular buildings are connected by an undulating wall, built of upright angular rocks, running northwest to southeast across the site. Ancient paths connect these structures.

Site 87 is a terraced hillside habitation site with access to the rich agricultural tract at Pampilla. Its larger terraces are presumed to be communal in nature. A single structure of excellent fieldstone construction was observed; it measures 6 by 5 meters (fig. 5.7). At 3.10 hectares, Site 87 is larger in size than other contemporary sites in its neighborhood.

At Site 105 there is a series of terraces, fragments of 65-centimeters-wide double-faced fieldstone walls, several



5.4. Site 43. Panoramic view of site (note structures).



5.5. Site 35. Theodolite map.



5.6. Site 9. A storage facility/silo within a circular structure interpreted as a house.



5.7. Site 87. Structure of excellent fieldstone construction.

small rectangular fieldstone structures, and at least one large ovoid structure of small boulders.

At Site 114 a single large (12 by 11–12 meters) fieldstone structure, internally divided by a low fieldstone wall, was observed. There is much broken plainware on its surface.

Terraced hillsides without (visible) structures appear to be more common (Sites 7, 25, 33, 64, 71, 75, 76, 84, 90, 97, 104, 111, 117–118–119, 124, 127, 139, 140, 142, 143, 152, 160–161–163, 168, 174, 220, 330, 343, 345, 352, 356, 363, 367, 373, 397, 443, 450, 456, 465).

There also can be structures on sites without visible terraces. Thus at Site 57 at least forty structures of varying size and shape, built of double-faced fieldstone walls, were accommodated to the natural contours of the hillside such that those structures at the narrow, low point of the hill are smaller than those on the broader upper surface. Structures are circular and irregular in plan with double-faced walls. Although large boulders naturally occur on the surface of the site, they were not used in construction, in contrast to the huaico sites described below.

Partitions of Space

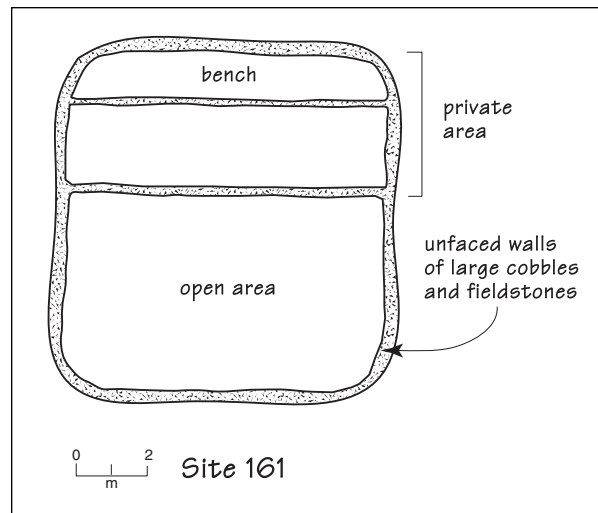
The horizontal surfaces of some terraces are partitioned (Sites 31, 48, 70, 88, 114, 397, 401, 443). Where partitioned, the subdivisions usually were created by the placement of large rocks (e.g., Sites 31, 443) or by a low, double-faced fieldstone wall, about 60 centimeters wide (e.g., Site 70), perpendicular to the length of a terrace.

At Site 397 three collapsed walls divide an upper terrace into minimally three 4-meter-wide spaces.

A different partitioning of space exists at Site 161, and it provides insight into the spatial organization of domestic life. Here, boulders and fieldstones divide the terrace into a 6-meter-wide front, open area, and a back, possibly roofed, private area that itself is subdivided by the presence of a bench (*banqueta*) that is 1.15 meters high and 1 meter wide (see fig. 5.8). At Site 48 a similar organization of space is seen.

Huaico Habitation Sites

One form of habitation is restricted to the upper valley and is extremely rustic. At Sites 38, 48, and 55A people appropriated naturally occurring clear spaces amid the existing rock rubble and boulders of huaicos as their living areas. Site 48 is the paradigmatic example. Where nature provided too large a horizontal surface, the ancients subdivided it by adding low walls of angular fieldstones. Thus, a 13-meter-long terrace was subdivided into two areas, 9 meters and 4 meters in length. Where nature did



5.8. Site 161. A domestic unit.

not sufficiently enclose a space, small fieldstones were added. The resulting settlements are highly amorphous, with irregular and circular structures descending the quebrada in accordance with the geotopographical configuration. It can be difficult to determine where nature ends and human-made alteration begins.

Refuse Deposits (Basurales) as Habitation Sites

At Site 521 domestic refuse is scattered across a looted site surface and is visible in the profiles of looters' holes. The refuse consists of vegetal fiber, plainware, a grinding stone, maize, and fire logs (*encendidores*) (fig. 5.9). Scatters of domestic refuse are also present at Site 487.

Other Habitation Sites

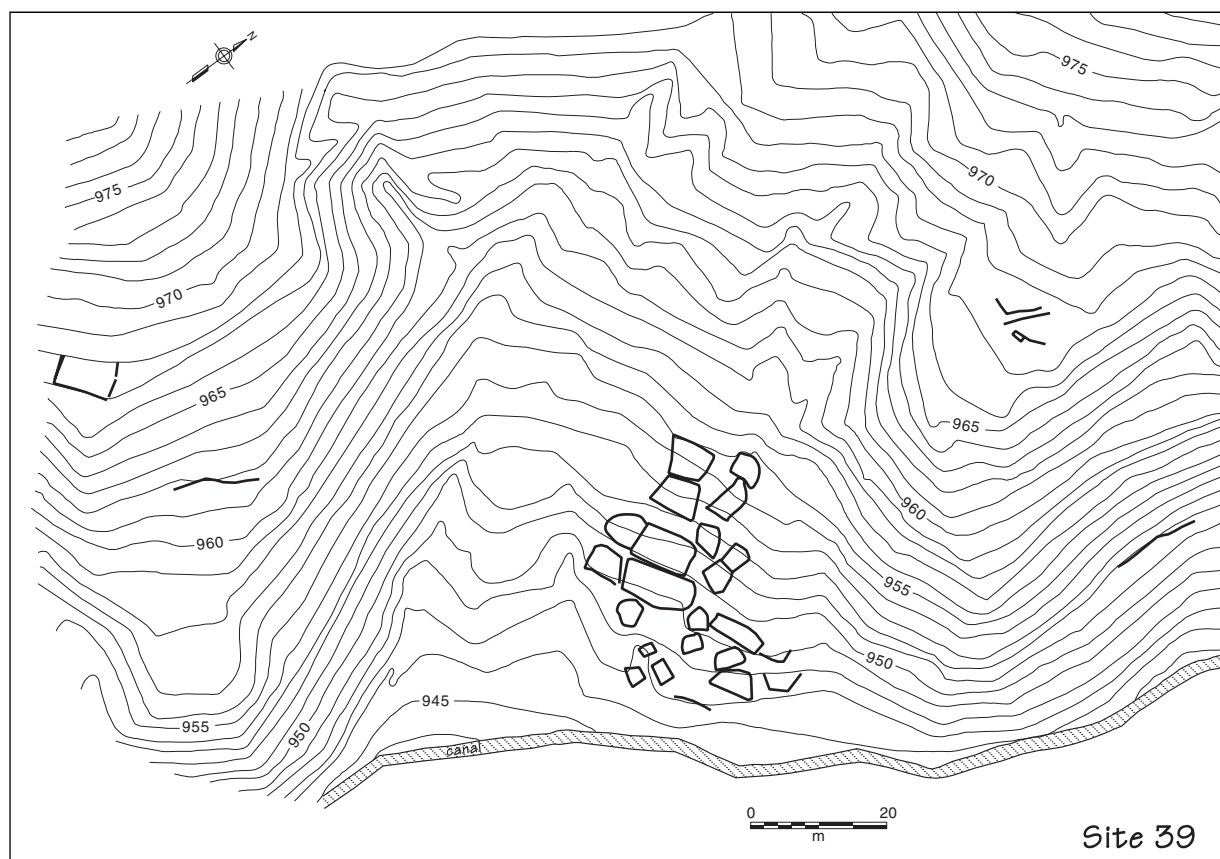
I believe that domestic occupations of unknown configuration are buried under later occupations at Sites 67, 172, and 537. Habitation at Site 505 may correspond to the remains of cane walls visible on a badly looted surface.

Encapsulated Civic-Ceremonial Functions

A few of the Nasca 1 habitation sites have an encapsulated civic-ceremonial area (Sites 39, 52, 64, 105, 111, 119, 139, 140, 373). By encapsulated I mean that habitation remains were directly associated with or in proximity to a nonhabitational area of manifestly ceremonial function such as a small mound (*huaca*) or cleared surface (e.g., a leveled hill summit) that, for the ancient Nasca, denoted ceremonial or ritual space (see Silverman 1990a, 1993a: fig. 5.12). The direct association of habitation sites and



5.9. A fire log/encendedor.



5.10. Site 39. Theodolite map.



5.11. Site 39. The cleared summit cum platform on the west side of site.

geoglyphs (as a special kind of cleared surface) is rare but known (Site 117).

The clearest example of a habitation site with an encapsulated ceremonial function is Site 39. Here a habitation zone is nestled in an embayment between two deliberately flattened spurs above it (figs. 5.10, 5.11). At Site 119 a terraced habitation zone is associated with a long, flattened, and cleared ridge summit, approximately 85 by 300 meters north-south. Similarly, the summit of the hill on which Site 105 is located is artificially flattened.

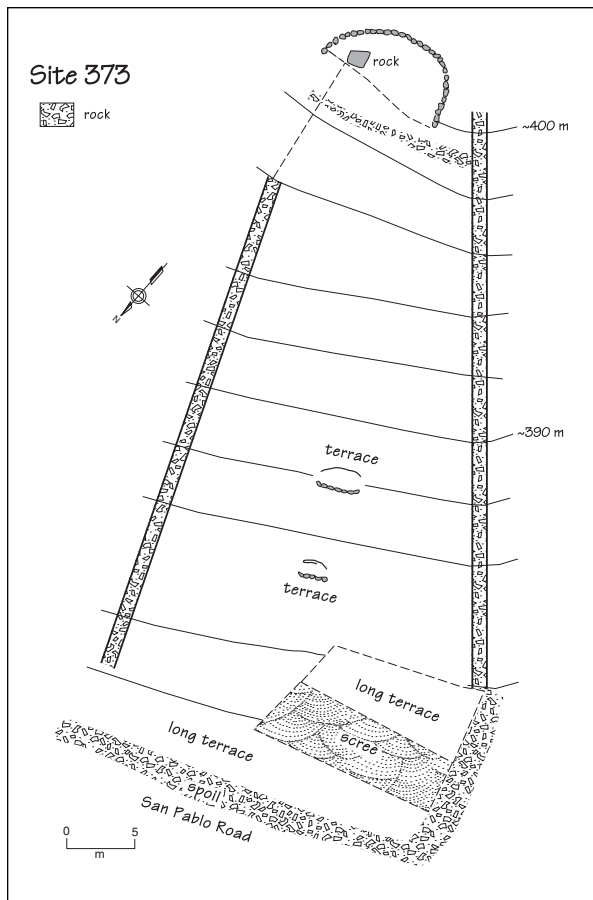
Another example of a habitation site with an encapsulated ceremonial function is Site 52. Here the habitation sector consists of circular fieldstone structures on narrow, rustic, fieldstone terraces at the base of a hill whose summit and three lower natural levels have been artificially flattened, thereby creating a *huaca*.

At Site 373 (fig. 5.12) a cleared, flattened summit is delineated by naturally occurring boulders and boulders that were carried in. At the base of the hill there are several terraces clearly visible. It must be considered that it is possible that the hill is better classified as a *huaca* than a terraced habitation site with an encapsulate civic-ceremonial function. This ambiguity can be resolved through excavation in the future.

Yet another kind of encapsulated ceremonial function is found at Sites 111, 139, and 140, where habitation terraces are associated with a small mound in the former two cases; the habitation sector of Site 140 today consists of barely visible fieldstone walls in the modern hamlet of Hornilla. The mounds at these three sites are modified hills that differ from one another.

At the large Site 111 there are two areas of habitation in Nasca 1 times (fig. 5.13). One consists of perhaps seven broad terraces that descend the hillside in gentle levels toward the valley until they reach an artificial mound on the northeast side of the sector. That mound is constructed of thin layers of vegetal fiber in a manner reminiscent of constructions at Cahuachi (see Silverman 1993a: 61). The other habitation area consists of densely agglutinated, small, stone-outlined terraces with a greater amount of plainware on the surface than elsewhere at the site. In the field this area struck me as analogous to a squatter settlement. Tentatively, I interpret these differences as better and poorer areas of residence at the site.

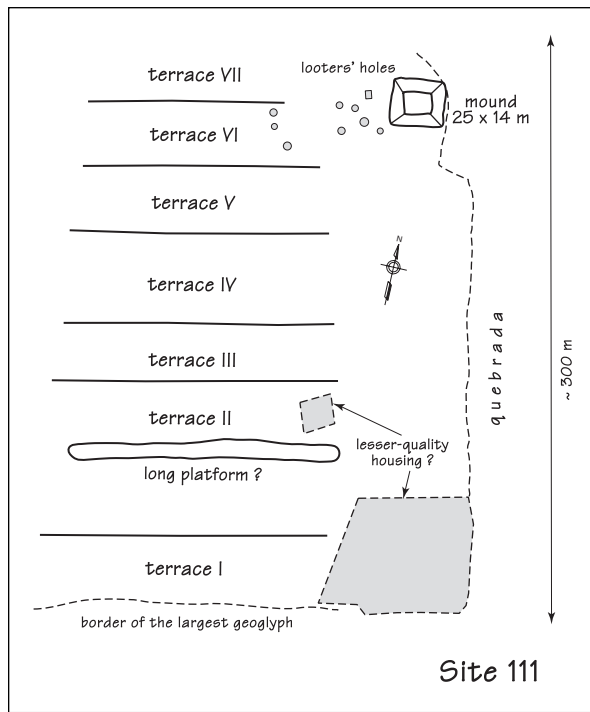
At Site 139 vegetal fiber also is used in the construction of a small mound. It is laid in dense layers. This, too, is reminiscent of Cahuachi (see Silverman 1993a: fig. 5.15).



5.12. Site 373. Sketch plan. Contours are approximate; contour interval is 2 meters.

Site 140's mound consists of three artificial terraces created by well-built fieldstone contention walls. The west side of the mound is delineated by a double-faced fieldstone wall, 80 centimeters wide, that extends down the length of the three terraces. The summit of the Site 140 mound measures 10 by 7 meters and is deliberately flattened; remains of a fieldstone superstructure are present on this summit, forming a room that may have measured 2.30 by 2 meters.

Site 297 also may be an example of a habitation site with an encapsulated civic-ceremonial function. Its agglutinated square rooms (3 by 2.50 meters and 3 by 3 meters) built of loaf-shaped adobes (these rest directly on coarse gravel) are unique thus far. The complex is massively looted because of intrusive LIP burials. I ascribe a habitation function to the architecture because of the many lithics (pounders, mortars) on the surface that could be associated with this occupation. Surface shell (*Choromytilus*, erizo) also may be associated with the Nasca occupation. Nevertheless, it seems reasonable to also or alternatively ascribe a civic-ceremonial function

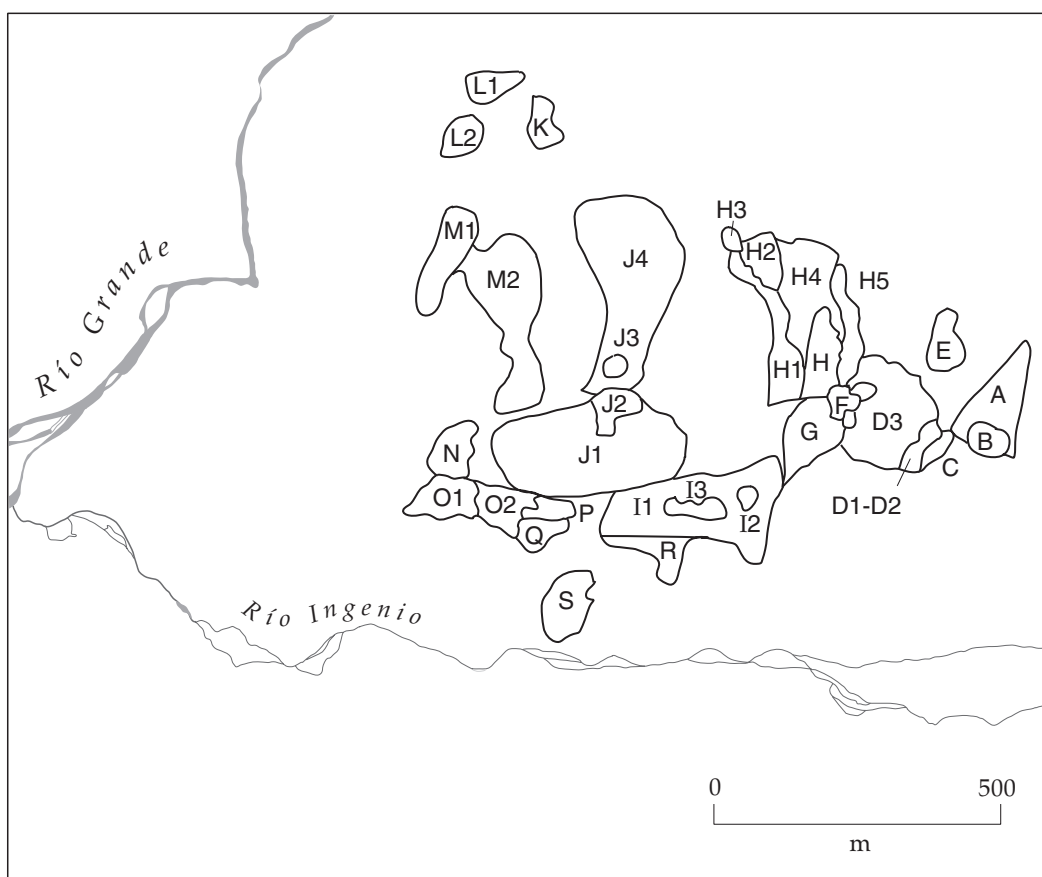


5.13. Site 111. Sketch plan.

to the site. I suggested above that Site 297's location immediately east of the Santa Cruz–Grande river junction and just off the rich valley bottom farmlands of Cabildo would have contributed to its importance. Excavation is needed for a more precise interpretation of the site.

Size Does Not Necessarily Correlate with Differentiation: Site 220

Like many other habitation sites discussed above, Site 220 has a domestic occupation expressed repetitively as terraces without further differentiation insofar as the surface reveals (fig. 5.14; CD: supplementary site descriptions: Site 220). At 9.60 hectares, however, the site is much larger than the other terraced habitation sites discussed above. I attribute the success of the settlement to its location at the junction of the Ingenio and Grande Rivers, where there is a relative abundance of agricultural land and a double opportunity for seasonal irrigation water. It is also possible that the site's location at the river junction also was perceived in symbolic terms as a



5.14. Site 220. (above) SAN aerial photograph 175-70/2704; (below) Nasca 1 sectors (note the junction of the Ingenio and Grande Rivers on extreme bottom left of photograph).

tinkuy. If so, perhaps the placement of this site conformed to ancient Nasca feng shui, attracting population because of the conjunction of favorable topography, hydrology, ecology, and ideology. I cannot explain why the site declines dramatically after Nasca 1.

Activity Areas

Activity areas were rarely recognized on survey. In Nasca 1 times there may be an activity area at Site 43 where a potter's disk and unbaked clay were observed on one side of a rectangular room in the habitation sector (bear in mind that later Nasca phases are represented at the site).

Site 114 is an ordinary terraced hillside habitation site except for having a great contention wall of angular fieldstones set in mud mortar that defines the north or upper side of the site and runs east-west across the hillside. Less than 2 meters in front of this wall and above the levels of habitation terraces that descend toward the valley there is a roughly square-shaped fieldstone structure with rounded corners, approximately 12 by 12 meters, within which a substantial amount of broken utilitarian ware was observed. A low, narrow fieldstone wall divides this structure on its east-west axis. Perhaps these are activity areas.

SDM 5.3: Nasca 1 Cemeteries

In the following discussion of Nasca 1 cemeteries it is crucial to indicate that single component cemetery sites are rare on survey. Therefore, what I ascribe to Nasca 1 may actually or in addition characterize burials of later epochs of Nasca society.

Nasca 1 cemeteries exist as discrete sites, independent of other site functions (e.g., Sites 101, 125, 149, the 192-193-194-195-237 cluster, 226, 227, 228, 278, 285, 440A, 548). There also may be discrete burial grounds at habitation sites (e.g., Sites 7, 9, 25, 119, 165) and at civic-ceremonial sites (e.g., Sites 80, 119, 279, 305). In addition, some burials appear to have been placed within a living zone, though at multicomponent habitation sites with burials (e.g., Sites 117-118, 174) it is difficult to know, on the basis of surface evidence, whether a tomb is intrusive in an earlier (abandoned) domestic context or whether it is contemporary. Similarly, where burials occur on an artificially modified hill or mound (e.g., Sites 195, 202, 380), it is difficult to know, in the absence of excavation, if the looted contexts are contemporary or intrusive, especially when there also may be a discrete, associated cemetery area nearby (e.g., Site 195 in the context of Sites 192, 193, 194, 237).

Not all habitation sites have or are associated with cemeteries (e.g., cemeteries are not found at the Site 160-161-163 cluster, Site 32, Site 33-35, and so on; compare SDM 5.2 and SDM 5.3). Later occupations may overlie Nasca 1 burials, as at Site 328, where Nasca 1 pottery was found in and around three looters' holes at a massively looted LIP cemetery sector.

Site 79 raises the problem of surface representation of subsurface reality in terms of this discussion of location and associations of cemeteries. Site 79 is a major LIP terraced hillside habitation site with earlier components that are visible to greater and lesser degrees on the lower slopes of the hillside. About half of the broken pottery littering the disturbed surface of one of the cemetery sectors (D) is Nasca 1, but there is no nearby Nasca 1 habitation site, unless the handful of Nasca 1 sherds recovered in the massive LIP habitation sector constitutes evidence of an earlier buried domestic locus. Note, too, the existence of alignments of large stones in some looters' holes: these could be walls, but their true function and date are unknown in the absence of excavation.

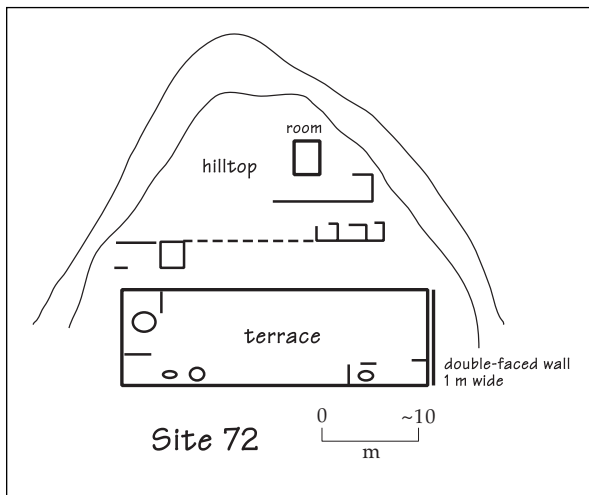
Whereas Site 220, on the north bank of the Ingenio River almost at the junction with the Grande River, was a large Nasca 1 (and even larger LIP) habitation site, Site 227 (fig. 5.15), in an equally important location on the south side of the Ingenio River at the junction of the Ingenio and Grande Rivers, appears to have been almost entirely mortuary in function in Nasca 1 and subsequent Nasca times (MH and LIP sherds are present but limited). The lack of nearby Nasca habitation sites on this south bank of the river suggests that this region was reserved for burial or that the habitation sites were in the valley bottom, as proposed above. Excavation is needed, especially because the aerial photograph suggests the presence of architecture that was not observed on the ground.

Mortuary Architecture at Cemetery Sites

Site 72 (fig. 5.16) is composed of several architectural features, all constructed of fieldstones set in mud mortar. There is a large, nonhabitational walled terrace within which are small, circular fieldstone-lined burial cists with an average diameter of 1.25 meters. The row of small, square rooms and the larger isolated room south of these are presumed to be funerary chambers. There is some kind of east-west-running wall or incompletely preserved structure. Because multiple phases of Nasca pottery are present and the site surface is so disturbed by looting, it is impossible to know the precise provenience of the fine Cahuachi Polychrome Incised pottery recov-



5.15. Site 227. SAN 175-70/2702.



5.16. Site 72. Sketch plan.

ered at the site (i.e., if it comes from a mortuary structure or from a simple tomb). It is reasonable, nevertheless, to think that Nasca 1 people buried at Site 72 had lived at Site 71, which is located directly above.

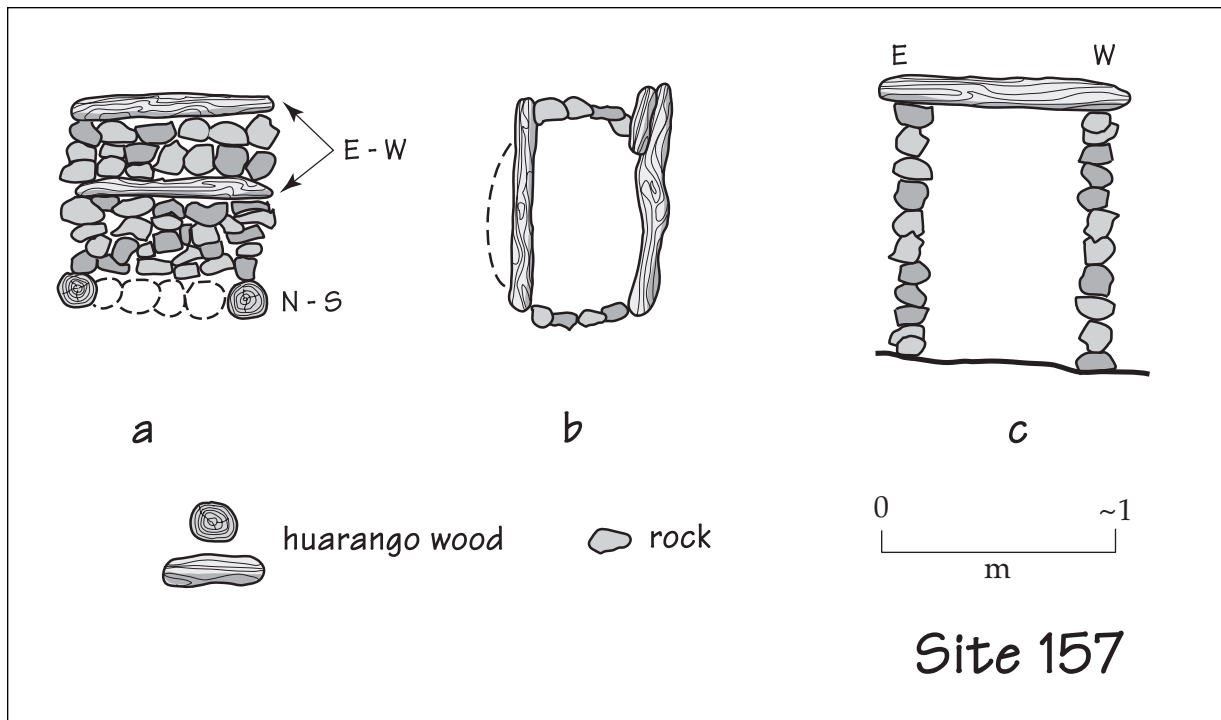
Although small, Site 101 was the richest Nasca cemetery found in the upper valley, and, arguably, the entire valley, to judge by the density and quality of broken pottery (Nasca 1 and other Nasca phases), human bone, and barbacoa remains scattered by looters on the surface. Two burial patterns were noted, with and without mortuary architecture. In addition to prepared circular cists, there also are tombs consisting of rectangular or square chambers with rounded corners, built of small fieldstones and small boulders placed in mud mortar. An example of such a chamber tomb measured 1.35 by 82 centimeters with walls preserved to a height of 80 centimeters. Also observed at Site 101 was a structure 12 by 16 meters in size, built of single-faced and double-faced fieldstone walls measuring 30–50 centimeters in width. The interior of this structure is looted, and, presumably, it is a funerary chamber. Later ancient people took advantage of the walls of this chamber by using them as the side walls of their own tombs.

The cemetery at Site 114 also shows use of existing walls for tomb construction. Here a great fieldstone contention wall delimiting the upper portion of the site was used as a side wall for some of the tombs present on a terrace below the contention wall; these tombs are circular in shape and are outlined in fieldstone, but they are not stone-lined cists. The average diameter of these tombs is 1.25–1.50 meters.

At Site 125 there are two well-made circular cists of fieldstones set in mud mortar; the fieldstones appear to have been carefully selected, since all are rectangular and of more or less the same size.

Two of the Nasca tombs at Site 157 were well-built stone-lined cists with preserved huarango log roofs at more than 2 meters below the surface (fig. 5.17). Because many phases of Nasca pottery are found here, it cannot be asserted that these two tombs are Nasca 1 in date.

The surface of Sector C at Site 341 is massively looted but with a small amount of human bone on the surface. Scattered across this sector are many large angular rocks that could correspond to destroyed cist tombs, though given that the sector is multicomponent it is possible that fieldstone cists were originally used as storage facilities and later reaccommodated for burials. Indeed, suggesting that there may be a destroyed habitation locus here is the existence of a portion of a fieldstone wall, 30 centimeters wide and 50 centimeters high, today preserved for a distance of 3 meters. A fragment of a possi-



5.17. Site 157. Tombs. (a) south profile of a tomb; (b) top view of another tomb; (c) profile of that tomb.

ble wall—of unknown function and consisting of a row of alternating large and small stone slabs placed vertically—was observed in a looters' hole, and by its depth it, too, may correspond to the earliest occupation of the site.

At Site 358 there are small circular fieldstone cists that are 90 centimeters in diameter and 1 meter deep. Circular fieldstone cists at Site 202 (which also has a civic-ceremonial aspect) are 1 meter wide and are looted to a depth of 2 meters below the surface. A destroyed circular, fieldstone-lined cist was observed at Site 237 amid unprepared pits. At Site 227 the fieldstones of circular cists are set in mud mortar; these tombs are wider than at the other sites noted, having diameters of 1.40–1.50 meters. Another tomb at Site 227 is a well-built chamber with rounded corners constructed of typical Nasca loaf-shaped adobes and measuring 2.50 by 1.60 meters.

Mortuary Architecture at Habitation Sites

Rarely, cemeteries are spatially distinguished by physical marking such as a fieldstone wall that separates the burial area from the rest of the site (e.g., Sites 75, 114) or that encloses or partially encloses it (e.g., Site 70). A tantalizing site in this regard is Site 99. A long fieldstone wall runs east-west across the site, separating the cemetery area from the habitation zone. However, the cemetery

and habitation zone do not appear to share the same Nasca phases: on the basis of the surface evidence, the cemetery was used by Nasca 1 and Nasca 7 people, whereas the habitation zone was occupied in Nasca 3, 4, and 5 times.

At Site 70 the fieldstone wall delineating the west side of the habitational terraces extends south toward the valley and partially encloses a cemetery. In this looted area three kinds of tombs were noted: (1) simple pits excavated in the ground, (2) circular fieldstone cists, and (3) a single chamber tomb in the form of a square box built of large fieldstones and measuring 1 by 1 meter with walls at least 50 centimeters high (fig. 5.18). Given the degree of looting, the fact that the site has multiple Nasca phases, the existence of an intrusive LIP occupation, and the extreme scarcity of sherds, the precise temporal correlates of these tomb types cannot be asserted (synchronic functional-status variation vs. diachronic development), though I strongly suspect they are contemporary. Inasmuch as there is Nasca 1 pottery at the site and no Nasca phase predominates, Site 70's burials are considered in this section.

Although most tombs at Site 142 are intrusive LIP in date, some tombs are probably contemporary with the multicomponent Nasca habitation function of which Nasca 1 is a phase. Two kinds of tombs were observed: unprepared circular pits excavated into the ground and



5.18. Site 70. A single chamber tomb in the form of a square box.

fieldstone-lined cists of excellent construction. The cemetery at Site 119 is predominantly LIP in date. Nevertheless, it is possible that the recovered Nasca pottery corresponds to the fieldstone cist tombs that exist here, some still with their stone roof slabs.

Some of the eroded terraces of Site 143 are looted because tombs are present on them. These tombs are 90-centimeter-wide circular cists with walls of fieldstone set in mud mortar. At the site there also are very well made walls of river cobbles plastered over with mud. These walls serve as containment walls for the site (?) and also as walls of special chambers, which have been looted and are interpreted as special mortuary architecture. One of these structures preserves a corner to a height of 1.10 meters above an apisonado floor; the south wall runs east for at least 1.50 meters, and the west wall runs north for at least 1.70 meters (fig. 5.19). Excellent Cahuachi Polychrome Incised sherds were recovered here in addition to other Nasca 1 types and Nasca 2 Cahuachi Polychrome (fig. 5.20).

Mortuary Architecture at Civic-Ceremonial Sites

In addition to ordinary unprepared pits, there was some kind of adobe mortuary architecture at Site 80, possibly

adobe-lined shafts, to judge from the piles of melted adobes in an area of looting at the site. Around these looted tombs there is much broken fine Nasca pottery (of various phases) as well as bone and the remains of barbacoas. At Site 195 there may be circular fieldstone-lined cist tombs. At the base of Site 301 there is a vast looted cemetery and a rectangular enclosure within which is another cemetery. The enclosure is built of 1-meter-wide, mud-plastered, single-faced and double-faced walls on top of which large rocks are set. The enclosure measures 24 by 18 meters, is open on its west side, and is divided into two more or less equal spaces by a north-south wall. Evidence of Nasca 1 burials was found here.

Urn Burials

In Sector M at Site 227 sherds from large storage vessels were noted around various fieldstone shaft tombs and, in one case, were associated with a human long bone. It is assumed that these heavy plainware sherds correspond to funerary urns and that some of these, at least, had been placed in the tombs. Nevertheless, given the massive looting of Nasca burials and features often mistakenly believed by looters to be tombs (such as storage pits,



5.19. Site 143. Corner of two walls built of river cobbles plastered over with mud. This pertains to special chambers interpreted as mortuary architecture.



5.20. Site 143. Nasca 1 Cahuachi Polychrome Incised Thin (lower left), Nasca 1 fine plainware (lower right), and Nasca 2 Cahuachi Polychrome sherds from the site's mortuary chambers.

particularly those built of fieldstones), the presence of a large plainware vessel does not necessarily imply an urn burial. This potential ambiguity is seen at Site 330, where, in a badly looted area, a large plainware vessel was observed buried (*empotrado*) in the ground (for a comparison, see Silverman 1993a: figs. 12.31, 12.32, 12.35; see also Silverman 1997: fig. 6). Inasmuch as small portions of three fieldstone contention walls occur on the northwest side of this sector of the site and presumably correspond to a habitation locus, it is uncertain if the large vessel is a storage vessel or a funerary urn or both (i.e., that an *in situ* storage vessel was reused for burial).

SDM 5.4: Nasca 1 Civic-Ceremonial Sites

Upper Valley

Nasca 1 civic-ceremonial sites were not recognized in the upper valley.

Middle Valley

Site 80 (figs. 4.7, 5.21; CD: supplementary site descriptions: Site 80) is located on the west side of Quebrada El Fraile. It has been badly damaged by road building and other activities; its dimensions will have to be determined by excavation, but the site is large and complex. As reconstructed from surface remains, Site 80 appears to have been a major, multicomponent Nasca civic-ceremonial center. Its sectors encompass mound architecture, geoglyphs, and a small area of habitation. The Nasca 1 component consists of a large, long, low mound (C4); a small mound constructed of thin, alternating layers of chala, rock, and dirt and with chambered fill contained by vertical stone walls (C5); a more or less U-shaped configuration of small mounds (C3a, b, c—the latter composed of three small mounds); civic-ceremonial space demarcated by means of walls (a 65-centimeter-wide double-faced fieldstone wall) running across promontories (D); small cleared patios on hills demarcated by means of a low, thin wall (D); and burials in a cemetery area (C2).

Site 80 has various parallels with Cahuachi. The layout of the three small mounds (C3a, b, c) is reminiscent of Units CC, DD, EE at Cahuachi (see Silverman 1993a: 80–81, fig. 5.36). The use of walls to demarcate cultural space in a context of hills is similar to Cahuachi's Units 4, 16, B (Silverman 1993a: chap. 5, see esp. fig. 5.12). The architecture of most of the mounds at Site 80 also is similar to Cahuachi's mounds in that they use construction

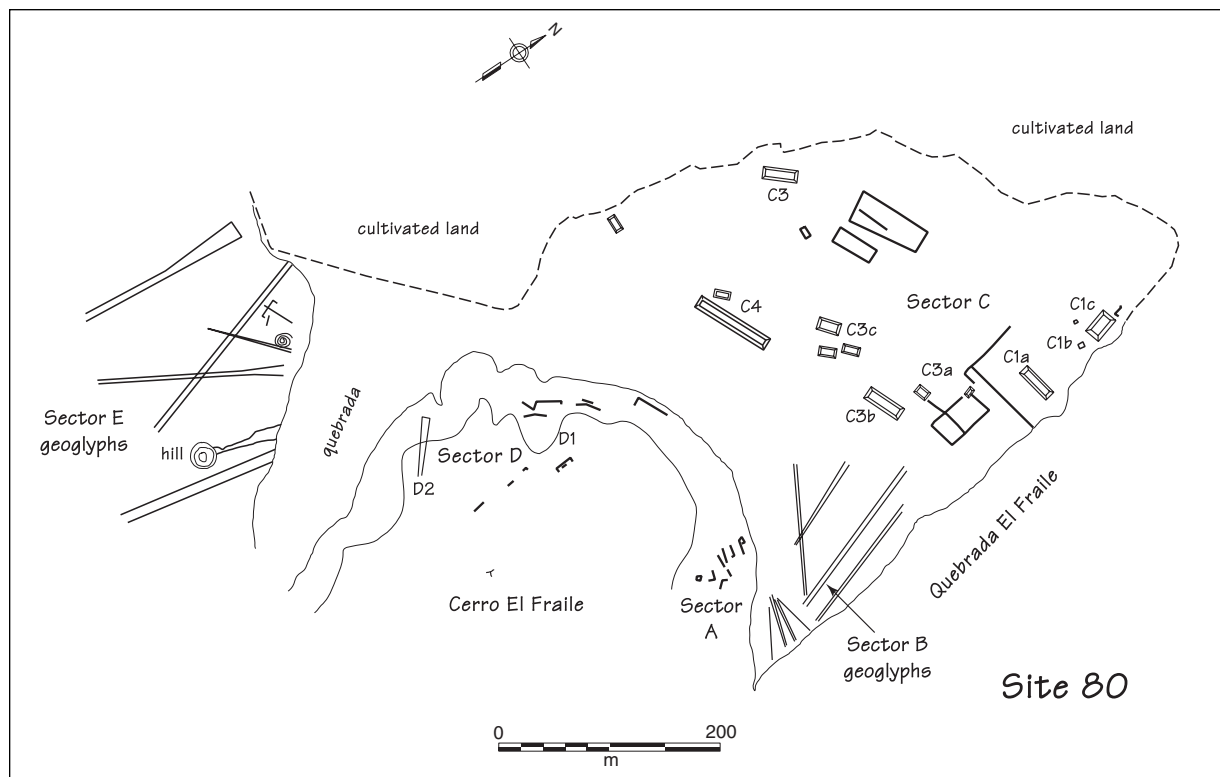
fills of chala, earth, and rocks raised horizontally in layers. The fills in the mounds of Site 80 contain shell, fineware, and plainware. I believe these objects were deliberately placed in the sections of construction fill, as has been observed at Cahuachi (Silverman 1993a: 50–51, 300 *inter alia*). However, the C3c mounds' construction fill is not layered; rather, it is laid in vertical sections of chala and sections of earth and rock fill. Unlike most of Cahuachi's mounds, which are built over hills, Site 80's mounds with Nasca 1 occupations appear to be completely artificial.

When intact, Site 376 was composed of four small platform mounds (three of which are in direct association with Nasca 1 potsherds). These mounds were created by small hills faced with fieldstone containment walls; no adobe construction was observed. The mounds may have been miniversions of Site 552 behind or south of them. Mound A is terraced into three platforms with fieldstone containment walls. The fieldstones appear to come from the cleared apron in front or north of the mound. Mound B similarly exhibits a cleared frontal apron and fieldstone containment walls. Mounds C and D have been bulldozed, but aerial photographs reveal the same pattern as with Mounds A and B.

The identification of Site 396 is less certain than Site 376. It appears to consist of four artificially flattened hills, almost unmodified. Experience at Cahuachi shows that early Nasca people were drawn to hills that had a naturally truncated appearance. In profile, A looks like a two-stage huaca; it is associated with Nasca 1 pottery. B is a truncated conical hill; no pottery was observed. C appears to be artificially raised and flattened; it is associated with Nasca 1 pottery. D may have a flattened top; a single LIP burial was found on it. Whether composed of three mounds or four, these hills are taken as a site.

At Site 446A at least six low mounds, walled patios, and lesser structures covered an area of 100 by 80 meters. These are visible on SAN's 1970 aerial photograph (2728) but are poorly preserved on the surface today because of extreme looting.

Site 380 is composed of terraces descending the hillside in two groups. The six terraces of the eastern side of the site (A) are well made and exceptionally large, measuring 60 by 15 meters. The entire surface of these terraces is pockmarked with looters' holes; human skeletal remains and pieces of barbacoes litter the surface. In the backdirt of one looters' hole (1.40 meters in diameter and 55 centimeters deep) a wide range of Nasca 1 pottery was recovered. Looting did not bring up garbage. On the basis of the size of the terraces, their lack of compart-



5.21. Site 80. Theodolite map.

mentalization, and the lack of domestic remains, I tentatively identify this terraced hillside as a civic-ceremonial site rather than a habitation site, but excavation is needed to securely determine the nature of the site. The terraces of the western side of the site (B) are smaller.

Site 372 combines civic-ceremonial features with a cemetery (Sector C) in Nasca 1 times. Sector A is a trapezoidally shaped cleared area measuring 42 by 39 by 39 by 26 meters that is delineated by the rocks removed from the surface and that create a 20-centimeter-high ridge. Sector B is another trapezoidal area, this one with an internal divisory wall (for this reason it is not considered a campo barrido).³ Sector D consists of two contiguous rooms of fieldstone construction that share a 50–60-centimeter-high medial wall. Sector E is an enclosure created by the rock and rubble cleared from the surface of the enclosure to create a wall that is 50–60 centimeters high and 1.50 meters wide. Sector F is a smaller, barely visible, square enclosure.

At Site 369 there is a pattern of alternating, discrete looted and cleared areas. The looted areas are interpreted as cemeteries. The cleared areas are interpreted as civic-ceremonial space. The site is badly damaged by modern road construction.

Lower Valley

On the east side of the angostura Site 182 is a hill whose north face has been artificially terraced into a truncated mound. There are slight indications of adobe containment walls, today badly melted. Similarly, Site 195 is a hill that has been modified through deliberate flattening. In this case, it is not the summit but rather the base of the hill that was affected: the ancients created a flat platform, approximately 40 by 40 meters. Likewise, Site 202 is a hill that has been artificially terraced to form three platforms contained by adobe walls, now badly melted. Fieldstone walls are present along the valley face of the mound. No Nasca 1 civic-ceremonial sites have been identified beyond the angostura. This may be due to problems of preservation, as has been indicated previously.

Middle Grande

There is an intensive civic-ceremonial manifestation on the east side of the valley where seven civic-ceremonial sites, of widely varying size and complexity, have been identified.



5.22. Site 279. Mound with cemetery in foreground.

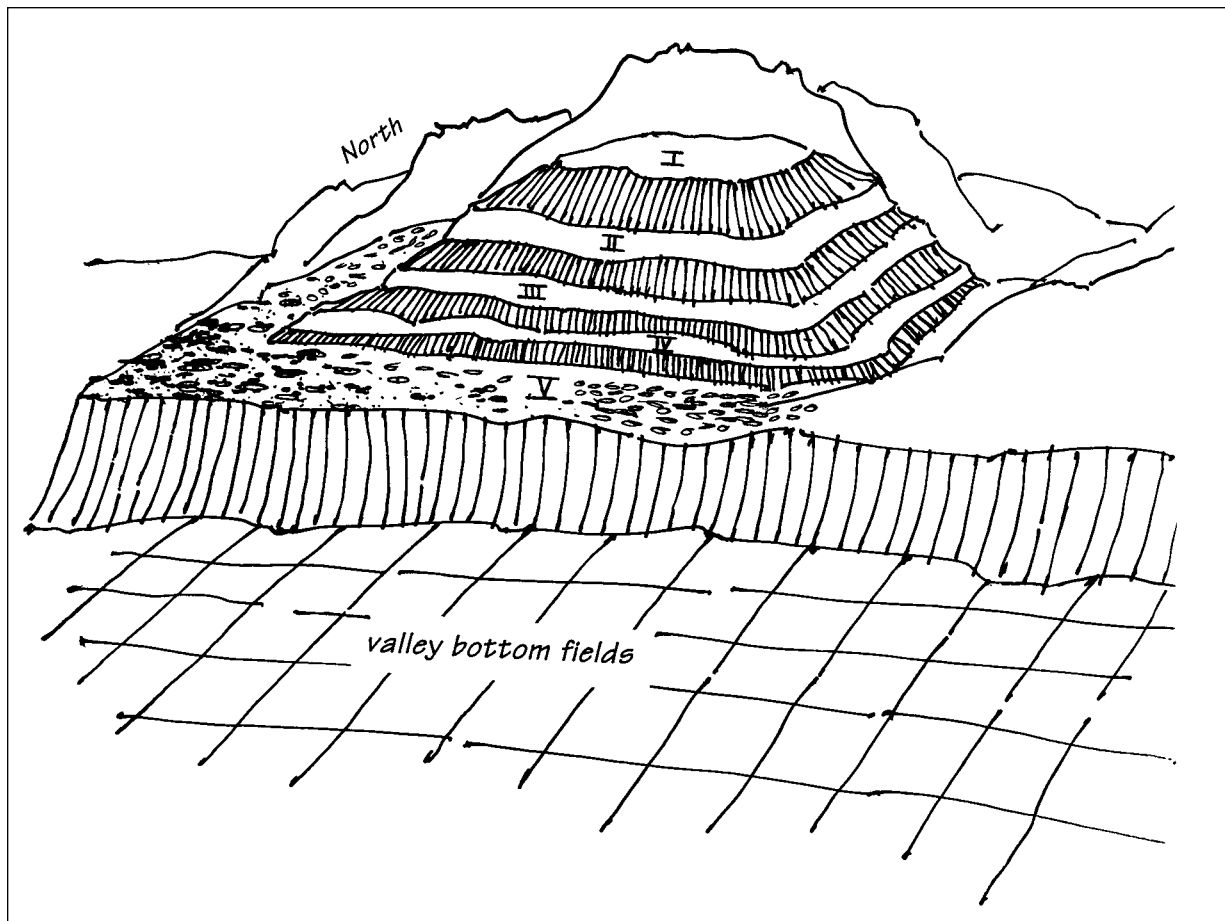
At Site 279 there is a small mound (12 by 9 meters in area, 3 meters high) built of typical early Nasca cane-marked conical adobes that form a solid fill (fig. 5.22; for comparisons, see analysis of Strong's cuts at Cahuachi in Silverman 1993a: 44–53 and Kroeber and Collier 1998: chap. 4). Fifteen panpipe fragments protruded from a profile of the fill (see mention above about the contents of early Nasca construction fills). In a looters' hole on the mound there is burnt daub with cane and post impressions, and the cane lies flat in a layer, as if from a collapsed roof. I believe this corresponds to a perishable wattle-and-daub superstructure on the mound.

In Nasca 1 times there is minor civic-ceremonial architecture at Site 287, which is a major geoglyph field with associated cemeteries (see Silverman 1990b: fig. 15). The architecture to which I refer consists of two small rectangular mounds. One mound measures 10 by 7 meters and is no more than a meter high. The other is 18 by 14 meters in area and 1.5 meters high. Both mounds appear to have been raised with a fill composed of material swept from the site surface: dirt, rock, canes, maize husks, bean stalks, *Choromytilus* valves, and Nasca pottery. I have argued that at Cahuachi the presence of similar seemingly domestic remains in the construction fills of mounds was the result of activities associated with pilgrimage such as feasting and temporary habitation

structures rather than the result of an in situ stratification of habitation remains (Silverman 1993a, 1994b).

Site 305 is a major geoglyph field with integrated civic-ceremonial and mortuary functions (see Silverman 1990b: figs. 10, 12). It is located on a flat terrace overlooking the floor of the middle Grande Valley. In Nasca 1 times the site encompassed mounds, patios, cemeteries, and geoglyphs.

Site 515 is clearly an important site by its size, setting, and integrated domestic and civic-ceremonial functions. The site is a large hill that has been artificially terraced with adobe walls to become a huge truncated mound overlooking the middle Grande Valley from its location on a high riverine terrace on the east side of the river (fig. 5.23; CD: supplementary site descriptions: Site 515). There is clear evidence of contemporary domestic use of this great civic-ceremonial site. A 30-centimeter-thick layer of light garbage (maize, fur, chala, unidentified shell, *Choromytilus*) is mixed in the sand that overlies the clayey sedimentary rock on which the site is elaborated. There is a continuous spread of domestic remains (lithics, utilitarian pottery) on the site surface between the Sector A huaca and Sector B, located immediately north.⁴ There is more plainware than decorated ware, but the amount of fine Nasca pottery, including Nasca 1, is significant. There is much bone at the northeast end.



5.23. Site 515. Sketch of the massive Sector A hill huaca with its five terraces.

Site 516, immediately northeast of Site 515, also is an artificially modified hill. At least three platforms descend from a flattened summit.

The initial Nasca 1 date of Site 500, another artificially modified hill with a deliberately flattened summit, is tentative. The site is considered in chapter 7 under the discussion of Nasca 3 civic-ceremonial sites for reasons explained in the text.

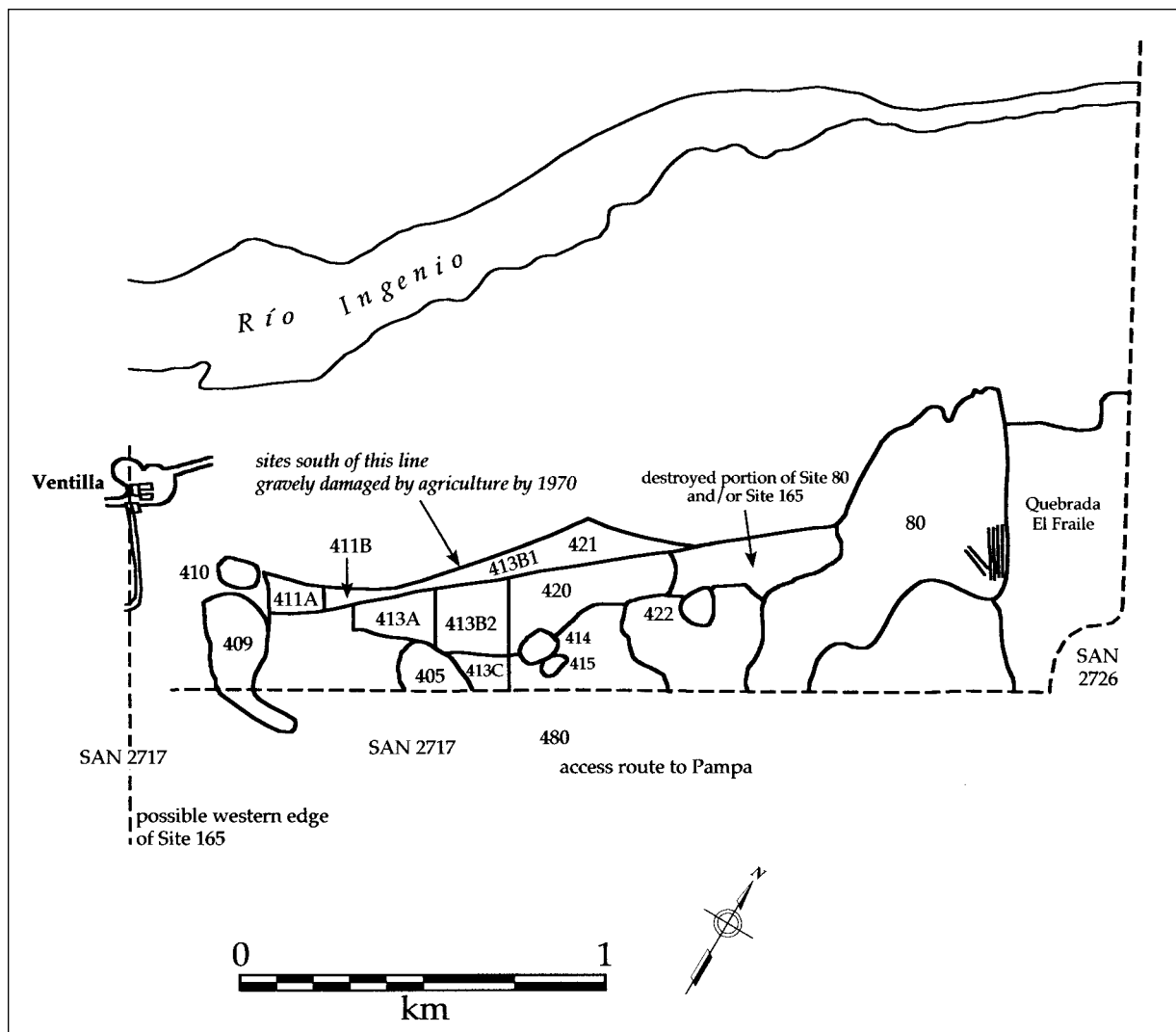
Site 301 is another variation on the modified hill theme. In this case, the ancients modified a gently sloping natural terrace by creating eight man-made terraces, each contained by a rock wall. The terraces vary in size from 19 by 13.50 meters at the top to 36 by 20 meters at the edge of the bluff overlooking the middle Grande Valley. The surface of the terraces is clear, and on some of them there is a pattern that is suggestive of rooms. On one terrace there appear to be six such rooms, each 3 by 2 meters in size. Some terraces are looted, though there is not much evidence of burials in most cases. On the lowest terrace there is a small rubble mound, 11 by 8 meters in area, that was created by clearing the surface of the

terrace. Separated from this sector by a cemetery is another mound, this one measuring 17 by 5 meters and 2 meters high. The mound may be composed of the rock rubble cleared from the surface north of it.

Site 297, on the west side of the middle Grande Valley, may have had civic-ceremonial functions in addition to the evidence interpreted as habitation (see discussion above).

Site 165

In Nasca 1 times Site 165 (fig. 5.24), on the south side of the middle valley, was composed of ordinary hillside terraced habitation zones (402, 409, 413C, 422), habitation terraces contained within walled enclosures (413A), ceremonial mound architecture (421B, 413B2), an apparently nonhabitational enclosure in which there are mounds and fieldstone walls as well as lower and higher areas interpreted as small platforms and patios (420B), a presumably civic-ceremonial rectangular fieldstone struc-



5.24. Site 165. The sectors of the site occupied in Nasca 1 times.

ture (480), and cemeteries (410, 411A, 411B, 413B1). Site 165's large size was probably facilitated by the relatively wide tract of arable land available in the middle Ingenio Valley and, possibly, its proximity to the Pampa, which, in addition to its ideological properties, was also a route of easy access to the Nazca Valley due south.

Site 455

At Site 455 (fig. 5.25), on the north side of the middle valley, there are terraced habitation zones and important communal and/or civic-ceremonial architecture. The terraces face the valley and wrap themselves eastward around the hill into a quebrada (fig. 5.26).

Sector A (fig. 5.27) either is an elite habitation zone or

a nondomestic unit of unknown function (presumably civic-ceremonial) or both. Sector F (fig. 5.28) is another self-contained, planned architectural complex. Only excavation can determine which functional and sociological interpretation is correct.

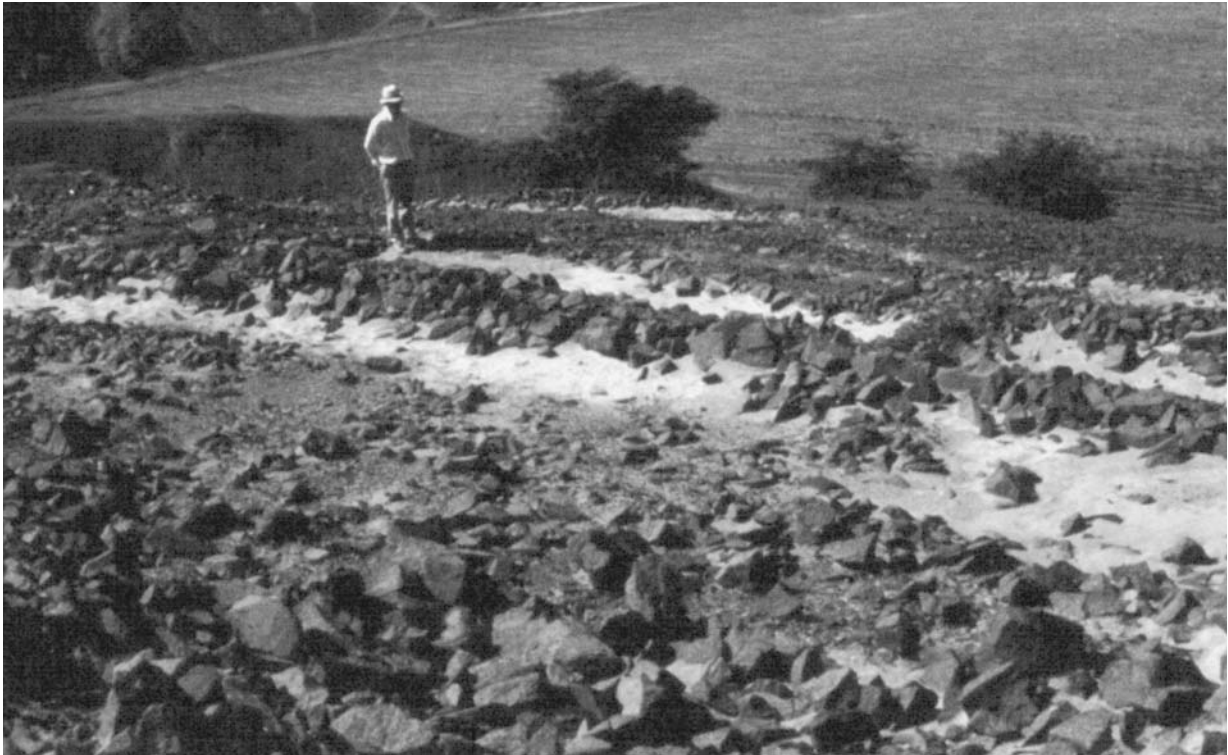
Groups of ordinary, presumably habitation fieldstone terraces (Sectors B–E, G, H) of varying width extend back along the hillside into the quebrada. Some of these terraces lack internal divisions or have other features that suggest the possibility that they were not habitation. Sector B (fig. 5.29) is a small area of excellent fieldstone terraces facing the valley. These terraces measure approximately 11.50 by 5 meters. Some may be divided by a low (20-centimeter) wall, approximately 3.30 meters by 45 centimeters, thus not closing the two spaces on the terrace. Sector C (fig. 5.30) has habitation (area



5.25. Site 455. Detail from SAN 175-70/2724.



5.26. Site 455. Looking up the quebrada, north to south, at Sectors C, D, E, F.



5.27. Site 455, Sector A. Planned architectural unit of bilaterally symmetrical terraces, facing the valley, well constructed of fist-size angular rocks. The terraces are laid out on either side of a central, 2-meter-wide corridor. Terraces measure 14 meters in length and are 2–4 meters wide. The surface of these terraces is virtually devoid of cultural material, and the terraces are unlooted. The fieldstone contention walls for these terraces are 1.5 meters high and 50–60 centimeters wide. They exhibit no mortar; larger rocks are used in the lower portion of these walls and smaller rocks toward the top. There are no courses of masonry.



5.28. Site 455, Sector F. Planned architectural complex built of double-faced fieldstone masonry. The entrances are very well marked by large angular stone door jambs. The walls appear in many places as gravelly dirt ridges, as if their stone facing had been robbed.



5.29. Site 455, Sector B.

1) and nonhabitational (area 2) terraces. Sector D consists of badly eroded long terraces descending the hillside. The terraces are built of large rocks that are immediately available. Sector E is a single terrace. Sector G is a small, isolated complex consisting of a vertical series of terraces that are delimited on either side by steep, narrow quebradas. Terraces measure 8.10 by 3 meters to 9 by 2.30 meters. The contention walls of these terraces are preserved to a height of 1.50 meters and are especially well made, with a deliberate use of large rocks at the base and small rocks at the top (as in Sector A) and an attempt to match angles. Although no pottery is found in this sector, the sector's construction technique and appearance strongly suggest contemporaneity with the other sectors of Site 455. Sector H is a vertical series of small terraces with double-faced fieldstone masonry contention walls. These contention walls have crumbled, leaving only 60–100 centimeters of clear horizontal surface on any terrace.

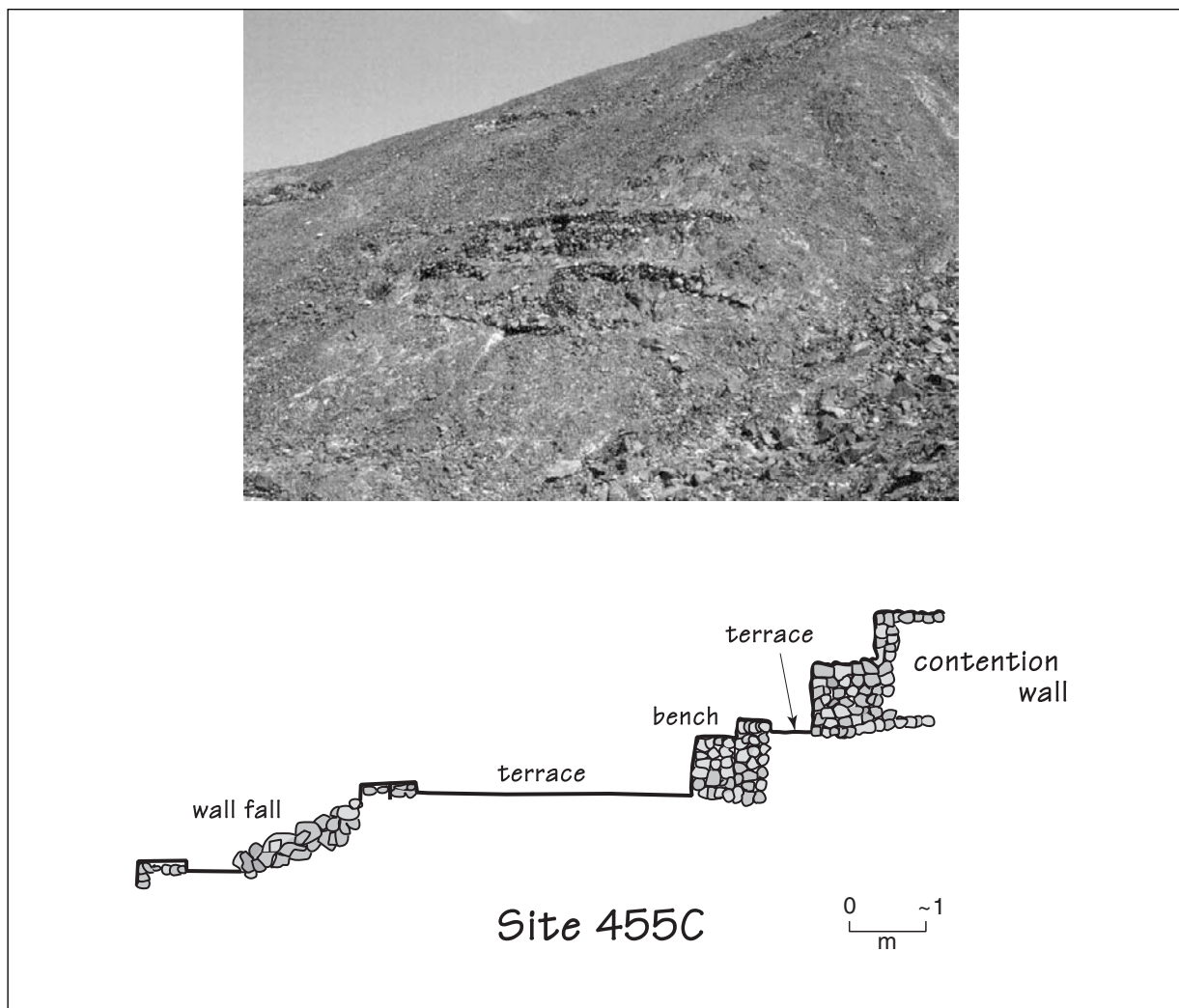
Site 552

Site 552, on the south side of the middle valley, is a large walled architectural compound or partial enclosure

within which are internal architectural divisions (mound, rooms, terraces) (fig. 5.31; CD: supplementary site descriptions: Site 552). The site is elaborated over a hillside. Many of the material remains on the terraced surface of Site 552 appear to be domestic, such as plainware pottery, tiny maize cobs, shell, occasional crude lithics (scrapers, cores), and a spindle whorl. At the same time, Site 552 appears to be the maximal expression of the four small mounds of Site 376, immediately north of it. Its broadly terraced and compartmentalized face is also reminiscent of Strong's Great Temple at Cahuachi (Unit 2; see Silverman 1993a: figs. 5.6, 5.7). As at Cahuachi, the form of the unit is responsive to the underlying topography. Only excavation will be able to determine the nature of habitation (elite?) at Site 552 and the kinds of supradomestic activities (civic-ceremonial?) that may have occurred there. But clearly, this is not an ordinary habitation site with a simple encapsulated civic-ceremonial function.

SDM 5.5: Nasca 1 Geoglyphs

The Ingenio–middle Grande geoglyphs have been discussed previously (Silverman 1990b; Silverman and Browne 1991). Bearing in mind the methodological diffi-

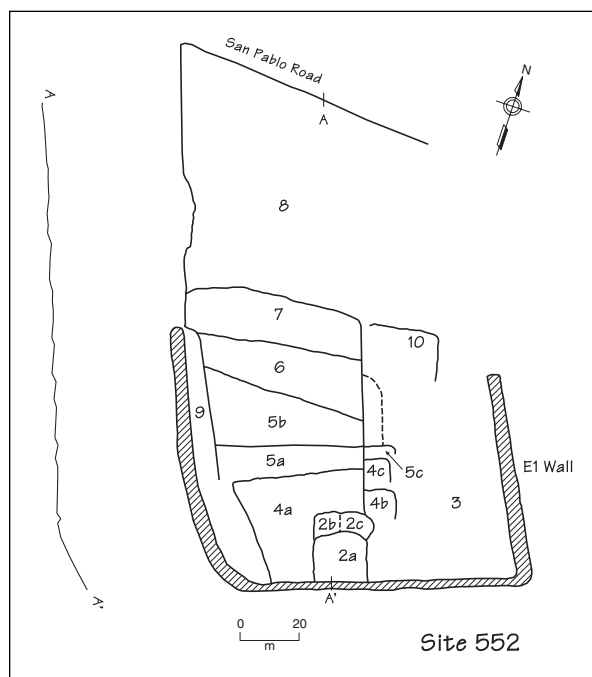


5.30. Site 455, Sector C. (*above*) looking north at site. Area 1 is located at the bend of the hill going in to the quebrada. It consists of habitation terraces measuring 15 by 3 meters to 17 by 4.5 meters in size. The back contention walls are 1.3 meters high. The front, inner contention walls are 35 centimeters high. The surface of some terraces is partitioned by medial walls about 1 meter wide. Area 2 is within the quebrada, at the southwest tip of its alluvial fan. The uppermost terraces are on the steep slope. These terraces are long and narrow, measuring 19 by 1.6 meters. These terraces are so narrow that they must not be habitation. Each has a bench (*banqueta*) in front of its retaining wall. This supplemental fieldstone wall could have served a roofing function. Ramps were created between the terraces using large angular rocks. A series of three terraces descends from these. These terraces are very eroded, and their contention walls have fallen down over the horizontal surface of the terraces. Beneath these there are two wide, rhomboidally shaped terraces, 17 by 4.5 meters in size, of orthostatic construction. I assume that these terraces are not habitation because of their size and lack of internal divisions. (*below*) schematic profile of a terrace.

culties and cautions I have indicated for dating these remains, a distribution of Nasca 1 geoglyphs can be discerned.

Nasca 1 geoglyphs are associated with habitation sites (e.g., Sites 117, 165/409/423), cemeteries (e.g., Sites 287, 305), and civic-ceremonial centers (e.g., Sites 80, 379-380) as well as dominating those civic-ceremonial aspects (e.g., Site 305 discussed above). Geoglyphs also

occur as discrete sites (e.g., Sites 215, 222A, 224, 225, 284, 360, 449, 551). Their formal range in Nasca 1 times includes single trapezoids (e.g., Sites 117, 551, 165/409, 284, 423), multiple trapezoids (e.g., Sites 222A, 224, 225, 379), geoglyph combinations (e.g., Site 215), straight lines (Site 360), and major geoglyph fields (e.g., Site 449: plan published in Silverman 1990b: fig. 15 as “geoglyph site 13H”; Site 287: plan published in Silverman 1990b: fig. 14 as



5.31. Site 552. Sketch plan.

“geoglyph site 57”; Site 305: plan published in Silverman 1990b: fig. 12 as “geoglyph site 65”).

Earlier in this chapter I made mention of the steep and rugged terrain in the upper valley and upper portion of the middle valley. This topography seems to have inhibited the elaboration of geoglyphs, for they are not found in any phase above 575 meters above sea level, which is where Site 117 is located. Furthermore, a clear ethnotopographic preference for flat, sloping hillsides and quebradas can be discerned in the placement of Nasca geoglyphs—indeed, one can virtually predict where they will be found.

When in use, Nasca people regarded geoglyphs as inviolable. By this I mean that space was exclusively dedicated to this function. If a geoglyph surface is marred by looting, the burials and geoglyphs are not contemporary; rather, the burials are subsequent. My point is demonstrated at Site 305 (see Silverman 1990b: fig. 10). Here there are massively looted Nasca cemeteries around, but not over, the campos barridos and trapezoids. At Site 287 (“geoglyph site 57” in Silverman 1990b: fig. 15), looting encroaches on campos barridos and corresponds to intrusive LIP burials.

In addition to the geoglyphs, refugios also were identified (see Silverman 1990b: 449–450). Refugios are small, circular outlines of stones (1.70–2.10 meters in diameter) or short, straight, double-faced fieldstone wall

fragments that are found in proximity to geoglyphs. They are interpreted as the foundations of perishable windbreaks or temporary shelters built by the ancient people as they worked on or attended the nearby ground markings. The number of refugios at a site appears to correlate with the size of the geoglyph phenomenon. Perhaps nine refugios were identified at Site 305, whereas at simple geoglyph sites there was one or none.

The Distribution of Fine Nasca 1 Pottery

Based on material from his excavations at Cahuachi, Strong (1957: 21–24, figs. 9, 10) defined several types of fine Nasca 1/“Proto-Nazca” pottery: Cahuachi Polychrome Incised Thick, Cahuachi Polychrome Incised and Modeled Thin, Cahuachi Polished Black Incised, and Cahuachi Stylus Decorated. Other types of Nasca 1 pottery were classified as “Late Paracas” (e.g., “Cahuachi Negative”: see Strong 1957: fig. 6f–j), and Menzel, Rowe, and Dawson (1964: 255) recognized strong continuity with Ocucaje 10 pottery from Ica. Similarly, “Cahuachi Red and White Decorated” (Strong 1957: fig. 8a, c, d), called “false negative” by Menzel, Rowe, and Dawson (1964: 256), developed out of antecedent resist wares. Strong did not recognize a particular set of thin-walled plainware bowl forms at Cahuachi as diagnostically Nasca 1 in date (see illustrations in Silverman 1993a: figs. 16.34–16.36). Yet on survey these have turned out to be the key Nasca 1 marker because of their ubiquity in contrast to the polychrome incised wares.

Till now, polychrome slipped and incised pottery of sure Río Grande de Nazca drainage provenience has been reported only from Cahuachi.⁵ Therefore, it was very exciting to recover examples on survey. The sites at which these materials were found are specified below (table 5.2).

The importance of noting the distribution of polychrome slipped and incised pottery is that this is the class of pottery that carries complex iconography in Nasca 1 times: it functioned as ceremonial ware. It is interesting, then, to observe that Nasca 1 polychrome slipped and incised pottery does not have a restricted distribution in Nasca 1 society, insofar as can be known from survey. It is found at ordinary habitation sites up-valley (including one with an encapsulated ceremonial function) and midvalley; at cemeteries in the upper valley (including in a special mortuary chamber), middle valley, and middle Grande; at civic-ceremonial sites in the middle valley and in a ceremonial area of the impor-

TABLE 5.2. Nasca 1 Polychrome Slipped and Incised Pottery located on Survey

<i>Site Number</i>	<i>Valley Section: Bank</i>	<i>N1 Site Function/Context</i>
64	upper: south	habitation
70	upper: north	habitation, cemetery
72	upper: north	cemetery
80	middle: south	civic-ceremonial: small mound
89	upper: north	unknown
101	upper: north	cemetery
114	upper: north	habitation
117	upper: north	habitation
140	upper: north	habitation with encapsulated civic-ceremonial function
143	upper: south	cemetery: special mortuary chambers
152	middle: south	habitation
165	middle: south	civic-ceremonial: low mound; large enclosure; L-shaped mound within an enclosure
303	middle Grande: east	cemetery
331	middle: south	cemetery
360	middle: south	geoglyph
376	middle: south	civic-ceremonial: mound
443	middle: north	habitation
446A	middle: north	civic-ceremonial: mounds, patios, lesser structures
552	middle: south	civic-ceremonial: enclosure containing artificial terraces

tant Site 165 settlement; on a geoglyph in the middle valley; and at an upvalley site whose Nasca 1 function is unknown.

Nasca 1 blackware also was recorded on survey. Blackware included interior pattern-burnished dishes and monochrome polished blackware bowls with and without vertical incisions on the exterior rim (for comparative examples from Cahuachi, see Silverman 1993a: figs. 16.4–16.10). Proveniences and associations for Nasca 1 blackware are listed below (table 5.3).

Fine Nasca 1 wares occur from the lower end of the upper valley down into and throughout the middle valley. They are infrequent in the lower valley and middle Grande, but bear in mind that in the lower valley this may be the result of underrepresentation given the sig-

nificant site destruction that is hypothesized. Fine Nasca 1 pottery is not restricted to the largest or most complex sites: it occurs at all site types identified.

Intrasite and Intersite Differentiation

Various sites manifest an internal differentiation of architecture or architecture that is significantly different from that present at the majority of other Nasca 1 habitation sites. In addition to habitation sites of greatly varying size and configuration, there were cemeteries, civic-ceremonial sites, and geoglyphs. It is appropriate to speak of intrasite and intersite stratification. The highly differentiated sites of the Nasca 1 landscape provide a congruent regional context for the major artistic and architectural florescence documented at Cahuachi in Nasca 1 times. As I indicated in chapter 1, all of these sites need to be considered if we are to achieve an informed reconstruction of Nasca society.

Although the Nasca 1 habitation sites vary by size (CD: spreadsheet 5.1), size does not necessarily correlate with internal site differentiation. Most Nasca 1 habitation sites are undifferentiated and, in my opinion, equivalent or redundant: large or small, they consist of uniform remains such as terraces. Site 220, a large habitation site at 9.60 hectares, does not appear to have special features, whereas some much smaller sites do. Encapsulation of a civic-ceremonial area is not always functionally significant in the sense of site hierarchy, for in some cases it appears to be the result of local practice (e.g., Sites 39, 139, 140 *inter alia*). Site 111 appears to have better and poorer areas of habitation as well as an artificial mound at one corner of the site. Subject to verification by excavation, I hypothesize that the spatial divisions at Site 73 were functionally significant. I do not consider Site 87's single, large fieldstone structure to indicate intrasite stratification; the site is an ordinary terraced hillside habitation site. However, Site 87 has fine Nasca 1 pottery (and its principal occupation dates to this phase) and abundant, unmodified petrified wood on its surface. These portable remains may be significant because at Unit 19 at Cahuachi I discovered a cache of size-graded pieces of petrified wood (Silverman 1993a: 281, fig. 19.18). I hypothesize that a direct relationship existed between Site 87 and Cahuachi in Nasca 1 times based on the petrified wood and the fine Nasca 1 pottery. Both classes of artifacts show that the inhabitants of Site 87 participated in the larger Nasca world. This may account for the success of the settlement.

TABLE 5.3. Nasca 1 Blackware located on Survey

<i>Site Number</i>	<i>Valley Section: Bank</i>	<i>N1 Site Function/ Context</i>
52	upper: north	habitation, civic-ceremonial: mound
70	upper: north	habitation, cemetery
87	upper: north	habitation
117	upper: north	habitation
118	upper: north	habitation, cemetery
126	upper: north	unknown
202	lower: north	cemetery, civic-ceremonial: mound
238	lower: south	unknown
305	middle Grande: east	cemetery, civic-ceremonial: mound
330	middle: south	habitation, cemetery
379	middle: south	geoglyph
441	middle: north	habitation
443	middle: north	habitation
447	middle: north	cemetery
448	middle: north	cemetery
455	middle: north	habitation
465	middle: north	habitation
479	middle: north	unknown
502	middle Grande: east	cemetery
548	middle: south	cemetery

Site 80 was already a major civic-ceremonial center in Nasca 1 times. There also were smaller Nasca 1 civic-ceremonial sites and encapsulated civic-ceremonial loci such as Sites 182, 195, 202, 279, 301, 369, 372, 376, 380A, 396, 446A, and 516. In addition, civic-ceremonial features (mounds) are present at major geoglyph sites such as Sites 305 and 287.

There were Nasca 1 sites with both civic-ceremonial features and habitation areas whose civic-ceremonial functions dominated their habitation zones. The huge hill huaca at Site 515 is a good example of this. Site 455 had highly distinct classes of architecture with both ordinary habitation terraces and major, planned architectural compounds. Similarly, at Site 552 there is evidence of both habitation and special-purpose architecture, in this case combined within a single architectural unit. Site 297 is clearly an important Nasca 1 site, apparently with a domestic occupation in the context of special architecture. It is interesting that at Site 165, a very large and complex habitation site with encapsulated civic-ceremonial architecture, there is virtually no evidence of mortuary differentiation (nor is there in the later phases of

Nasca occupation at the site). Indeed, burials here are among the simplest recorded on survey: unprepared pits in the cemeteries in 411A, 411B, and 413B1; at 410 the only elaboration is the presence of barbacoas.

Data from Nasca 1 burials must be considered in this discussion of inter- and intrasite stratification. Important grave goods have been found at burial sites without evidence of further investment in tomb elaboration. Thus at Site 122, consisting of three looters' holes corresponding to unprepared pits on a possibly artificially leveled terrace on a hillside, a cylindrical lapis lazuli bead (16 by 4 millimeters, orifice diameter of 2 millimeters) was found; this is one of the few exotics for any time period encountered on survey. Also found at Site 122 was a black pattern-burnished sherd. At Site 300, a cemetery also consisting only of unprepared cists, another cylindrical bead of lapis lazuli was recovered (the second of only two such recovered at Nasca sites). At Site 548 (a single component site unlike the previous two examples) five looters' holes correspond to Nasca 1 burials. Here a piece of chrysacolla (the only piece recovered at a Nasca site on survey), excellent quality polished blackware, and a fragment of a modeled step-fret-shaped panpipe were recovered on the site surface, which was littered with fragmented bone and broken barbacoas, though no tomb architecture was observed. These cemeteries would have minimal rank in a settlement pattern hierarchy, yet seemingly ordinary Nasca tombs could contain luxury goods of limited distribution in society.

Notes

1. It is important to note that Cabildo, today one of the richest farming estates of the Río Grande de Nazca system, is located in the valley bottom here, mere meters north of the Santa Cruz–Grande junction. The Cabildo estate is reputed to have been rich in Nasca materials (Sawyer 1997; Tello 1931). Two of the most important early Nasca sites recorded on survey are located above Cabildo: Sites 305 and 515.

2. It should be noted that there is a massive LIP habitation site on the Nazca side of this junction at Cerro Colorado.

3. I have previously defined the campo barrido as a distinct type of geoglyph, typically square in form but also with rectangular and, possibly, trapezoidal manifestations. The campo barrido is a flat area from which surface rock appears to have been removed or swept off. The sides of the campo barrido are not as well defined as the rock-lined borders of other kinds of geoglyphs. I believe that campos barridos are related to the Nasca custom of creating sacred or civic-ceremonial space, whether at ground level or by flattening and clearing the tops of hills. These are features observed at Cahuachi and throughout the Ingenio Valley (see Silverman 1990b: 444, 1993a: chaps. 5, 6).

4. Toward the valley there is destroyed architecture consisting of a long cobblestone wall and possible rooms. The very scarce amount of LIP pottery at Site 515 corresponds to an intrusive occupation—either the cobblestone architecture or tombs or both.

5. Interestingly, Tello (1917; Tello and Mejía Xesspe 1967: 146–147) did not discover Nasca 1 tombs during his cemetery excavations throughout various tributaries of the Río Grande de Nazca drainage, nor was any recovered by Kroeber (see Kroeber and Collier 1998).

6

Nasca 2 Settlement Patterns in the Ingenio and Middle Grande Valleys

Nasca 2 pottery was identified on the surface of 132 sites distributed throughout the survey area (SDM 6.1; see CD). Nasca 2 corresponds to Strong's (1957: 24–25, fig. 11; see also Silverman 1977) Cahuachi Polychrome and to the larger range of Nasca 2 pottery defined by Lawrence Dawson (see Silverman 1993a: chap. 3, 238–239, fig. 3.3). In the field it was often difficult to distinguish Nasca 2 from Nasca 3 pottery on the basis of broken surface pottery. Nevertheless, I believe that, in general, Nasca 2 was recognized.

Nasca 2 sites are identified as habitation sites; habitation sites with cemeteries; habitation sites with civic-ceremonial areas; habitation sites with cemeteries and civic-ceremonial areas; habitation sites with cemeteries, civic-ceremonial areas, and geoglyphs; cemeteries; civic-ceremonial sites; sites composed of cemeteries and civic-ceremonial areas; geoglyphs; and sites whose function in Nasca 2 times is unknown (CD: spreadsheet 6.1).

SDM 6.2: The Setting, Location, and Spacing of Nasca 2 Habitation Sites

Upper Valley

Habitation sites appear positioned to take advantage of pockets of arable land created by the meandering of the Ingenio River and by the existence of pukio water for irrigation (CD: Nasca 2 pukios: map, text). There is a long gap in settlement between Sites 87 and 115 in Nasca 2 times. At the lower end of the upper valley, below which the valley widens, there is a notable cluster of Nasca 2 sites, particularly on the south side of the valley. This settlement pattern contrasts with the rest of the upper valley, where sites are more widely spaced and fewer in number.

Middle Valley

On the south bank of the river, upper valley occupation is continuous into the middle valley down to Site 152. West of Site 152, however, there is a significant gap in occupation until Site 172. On the north bank, a major gap in habitation exists between Site 140, at the end of the

upper valley, and Site 367, in the middle valley (see Section 3 of SDM 6.2). Then there is another significant gap in habitation until it resumes at Site 460 on the north bank and Sites 80A and 165 on the south. No other Nasca 2 habitation sites were identified between these sites and the angostura.

Lower Valley

There are few Nasca 2 sites around the angostura. Those that exist are cemeteries or minor ceremonial areas, or they are functionally unidentifiable because of post-Nasca occupations.

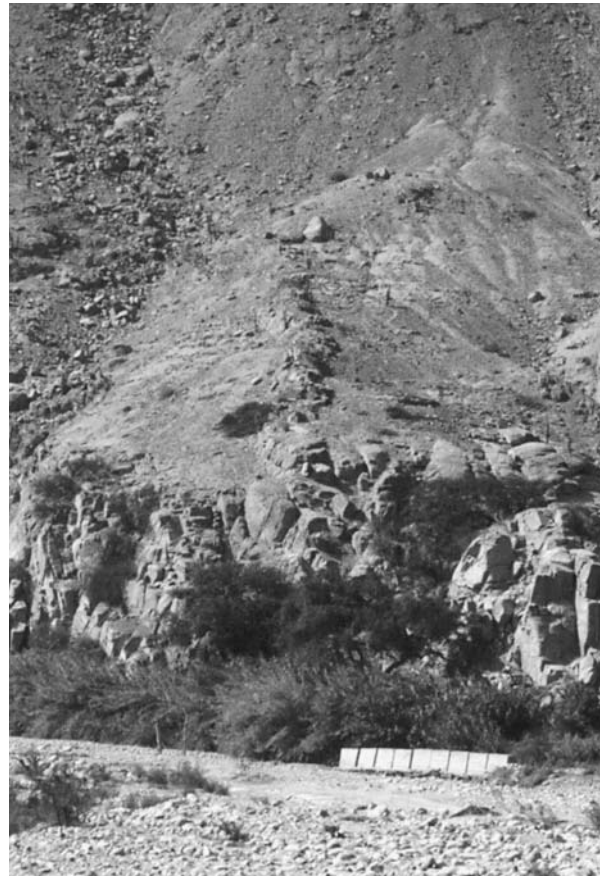
The entire lower valley appears to be unoccupied in Nasca 2 times.¹ As mentioned previously, I believe this is a preservation problem and not a reflection of ancient reality. In support of this suggestion is the fact that there are Nasca 2 cemetery sites in the lower valley (see Section 4 of SDM 6.3). Presumably, these corresponded to the relatively proximal needs of once living people.

Middle Grande

There are no Nasca 2 habitation sites on the west side of the middle Grande. On the east side, however, there are several habitation loci, located well down the sector. Note, too, the number of cemetery sites on this bank of the valley, which both confirms the habitation settlement pattern and suggests the possibility of valley bottom habitation to account for the number of cemetery sites (see Section 5 of SDM 6.3).

Kinds of Nasca 2 Habitation Sites

Nasca 2 people created different kinds of domestic habitats. The most common habitation sites are terraced hill-sides. Structures are present at some of these sites (Sites 1, 9, 21, 32, 43, 47, 59, 114-115, 159) and appear to be absent at others (Sites 7, 11, 20, 30, 41, 64, 71, 76, 80A, 87, 91, 130, 140, 152, 160-163, 344, 356, 367, 380B, 455D, 460). At some terraced hillside habitation sites, the surfaces of some terraces are partitioned (Site 70). Living sites could be accommodated within huaicos (Sites 42, 55A, 145). Some habitation sites have encapsulated civic-ceremonial areas (Sites 39, 52, 117-118-119). Rarely, a habitation site is in association with geoglyphs (Site 117). Burials and/or spatially discrete cemeteries are present at some habitation sites (Sites 7, 9, 30, 42, 43, 47, 59, 70, 80A, 105, 118, 142, 143, 165, 326, 344, 502, 520). Refuse deposits constitute a distinct category of habitation site (Site 326; and see discus-



6.1. Site 91. Panoramic view.

sion of Site 520 below). We also recognized the existence of presumably domestic sites of unknown configuration buried under later occupations (Site 172).

Simple Terraced Fieldstone Habitation Sites

Various Nasca 1 habitation sites continued to be occupied in Nasca 2 (compare SDM 5.2 and SDM 6.2, and see previous chapter for comments). Therefore, as with Nasca 1, the majority of Nasca 2 habitation sites are terraced hill-sides, with and without fieldstone structures or visible spaces on the terraces. Sites 11, 20, 30, 41, 59, 91, 130, 159, 344, 460, and 520 were newly founded in Nasca 2 times. Remarks can be made about some of these new sites.

Terraces at Site 20 measure, on average, 6–7 by 4 meters, though they can be larger where the topography permits. Two contiguous terraces can occur on the same level of the modified hillside; contiguous terraces share a medial wall. Storage pits were observed on some terraces. These storage pits are interesting because they incorporate the fieldstone terrace walls as part of their own structure.



6.2. Site 91. An ovoid terrace.

At Site 59 terraces are visible as a single row of small fieldstones. On these terraces there are circular structures built of double-faced fieldstone walls. There also is a square structure, 2.30 meters in diameter, built of double-faced fieldstone walls. There is much empty, irregular, undefined space on the site surface between structures.

Site 91 consists of some twenty terraces (fig. 6.1) defined by fieldstone contention walls more than 1 meter high. The form of these terraces varies from rectangular to ovoid (fig. 6.2). The terraces measure, on average, 4.60 by 3.20 meters. Storage pits are present on some of the terraces.

Site 159 is interesting because its contention walls were formed of large fieldstones (and recall that in Nasca 1 times boulders had been used at Site 160-161). A few circular structures are visible on the terraces.

At Site 520 at least six terraces descend a hillside. On the terraces there are clear areas measuring 3 by 2 meters that are delineated by fieldstones. Presumably, these are domestic areas. A thin layer of garbage (vegetal fiber, cane, maize, shell) is visible in several looters' holes, confirming that the terraces are habitational.

Huaico Habitation Sites

The use of huaicos for habitation continued at Site 55A (see previous chapter) and began at Sites 42 and 145. At Site 42 the ancients took advantage of the natural open spaces between rockfalls to create their domestic structures. The majority of the structures at this site are built of a single wall of naturally occurring boulders. They vary from 4 to 8 meters in diameter and are interpreted as habitational. In addition, one large (16 by 10 meters) rectangular enclosure built of large (40 by 30 centimeters), angular fieldstones and boulders was observed and is interpreted as a communal area.

At Site 145 there were two or three houses created in natural clearings amid the rock rubble of the huaico (fig. 6.3). At this site a double-faced fieldstone wall also was observed.

Refuse Deposits (Basurales) as Habitation Sites

At Site 326 in the middle Grande, a 30-centimeter-thick layer of rich organic soil containing diagnostic Nasca pottery is observable in looters' holes.



6.3. Site 145. A house amid the rubble of a huaico.



6.4. Site 502. Surface remains.



6.5. Site 119. Large rectangular enclosure.

The refuse from what may be a potter's house and burial may have been identified at Site 502. The site is located up a wide sandy depression (*hondura*) in the middle Grande Valley, only 500 meters north of the Nazca River, and is on the north slope of the hillside that defines the south side of the depression. Remains of maize, shellfish, burnt daub, an upright *huarango* post, a thick layer of *chala*, and pieces of fine Nasca 2 and 3 pottery litter the surface (fig. 6.4). I believe that looters destroyed a wattle-and-daub structure here. Moving up the side of the depression from the alleged structure, there is an accumulation of unburnt loaf-shaped adobes, a piece of burnt clayey rock, and a couple of fragments of unidentified bone.

Nearby, in a small area measuring about 12 by 4 meters, there is more evidence of recent looter activity. I think the looters excavated in or amplified three already existing depressions in the naturally occurring clayey soil. One looters' hole is roughly rectangular, 3 by 1.50 meters. The face of this depression is burnt black, a feature not observed elsewhere on survey in Nasca burial cists. Surrounding the looters' hole are abundant *huarango* pods, a cache of *achira*, broken gourd fragments, a broken grinding stone, a rock whose concave face is stained with red pigment, some husks of maize, part of

a human skeleton with brealike decaying flesh, the end of a desiccated squash, very deteriorated textile remains, a fragment of a ceramic polisher, two fragments of a potter's plate, one panpipe fragment, a few Nasca 1 and 2 sherds, and a very deteriorated tapering pottery spout (unattached to either bridge or handle). At least some of these remains could correspond to the burial of a potter. Perhaps the depressions were used for firing pottery and subsequently for burial.

Nasca 2 is the phase shared in common by the habitation locus and the grave locus. I tentatively attribute the speculatively hypothesized pottery manufacture to Nasca 2. In addition, there is a looted cemetery at the site with very fine Nasca 1, 2, 3, and 4 pottery on its surface.

Encapsulated Civic-Ceremonial Functions

Habitation sites with encapsulated civic-ceremonial functions were identified at Sites 39, 52, and 111 (all discussed in the previous chapter) and at Site 119 within the Nasca 2 Site 117-118-119 cluster. Above the habitation zone at Site 119 there is a small (1 by 5 meters) platform, delineated by a fieldstone wall. This platform is in front of a large rectangular enclosure (22 by 31 meters) constructed of 50-centimeter-wide double-faced fieldstone walls (fig. 6.5).



6.6. Site 371. A wall fragment revealed in a looters' hole. The wall is made of fieldstone set in mud and covered with mud.

SDM 6.3: Nasca 2 Cemeteries

In discussing Nasca 1 burial patterns I indicated the difficulty of dating looted mortuary contexts at multicomponent sites (see chapter 5). Bearing this in mind, the distribution of Nasca 2 cemeteries is now presented.

Most of the variations of cemetery location and association that were noted for Nasca 1 pertain to Nasca 2 cemeteries, many of which are functionally continuous from the earlier time (compare SDM 5.3 and SDM 6.3). Thus Nasca 2 people buried their dead in habitation sites (Sites 47, 59, 118, 142, 143, 344, 380B, 520), at habitation sites but separate from the domestic sector (Sites 7, 9, 30, 42, 43, 70, 105, 165, 326, 502),² at discrete cemeteries unassociated with habitation sites (Sites 72, 79, 101, 125, 149, 150, 157, 175, 214, 216, 221, 227, 228, 250, 253, 263, 278, 280, 285, 300, 343?, 380, 392, 440, 447, 448, 454, 462, 471, 504, 507, 508, 509), and at civic-ceremonial sites (Sites 80, 182, 195, 202, 279, 287, 301, 305, 369, 370, 445, 466). No Nasca 2 habitation site appears to spatially segregate a cemetery area from a habitation zone through physical marking with a divisory wall (e.g., as at Nasca 1 Sites 75, 114), although at Site 70 (with Nasca 1, Nasca 2, and later occupations) a fieldstone wall partially encloses a burial area.

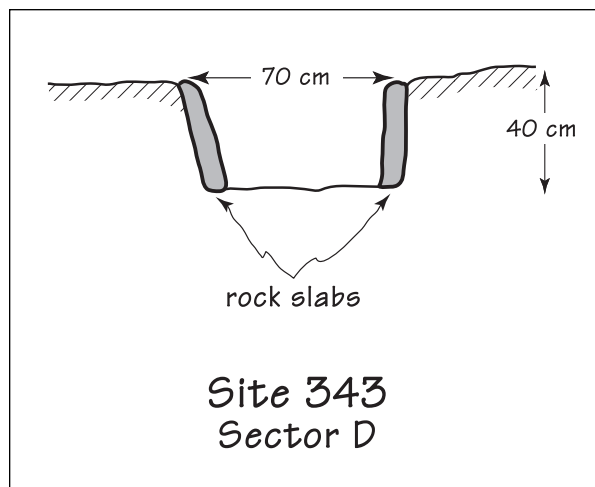
Site 371 raises the previously mentioned issue of habi-

tation loci being obscured by looting. Some looters' holes at Site 371 are up to 2 meters deep and 5 meters wide. Looters also dug 10-meter-long trenches. Although the only remains visible on the looted site surface are broken pottery and bones, it is important to indicate the existence of a wall fragment revealed in a looters' hole (fig. 6.6).

Nasca 2 burial patterns vary by site and within sites. The most common Nasca 2 burial pattern appears to be interment in shallow, unprepared pits. However, mortuary architecture is present at some sites. At Sites 253, 278, 280, and 300 huarangos and canes from the barbacoas of looted tombs litter the surface, but there is no evidence of tomb architecture. Rather, the burials appear to have been placed in shallow pits in the ground. Stone-lined cists may have existed at Site 221, but the site surface is too destroyed to permit certainty. Those sites having mortuary architecture that have not been previously discussed are considered below.

Mortuary Architecture at Cemetery Sites

In Sector D at Site 343 there is a cist built of rectangular slabs of rock placed vertically at a slight incline (fig. 6.7).³



6.7. Site 343. Sector D. Cist with inclining sides.

Mortuary Architecture at Habitation Sites

At many Nasca sites, prepared and unprepared tombs co-occur. Thus at Site 7 evidence of six looted tombs was observed, two of which are circular fieldstone cists. At Site 30, in addition to simple unprepared pits, there are 1-meter-wide cist tombs of circular form, 1 meter deep, built of fieldstones and covered with stone slab roofs; other cist tombs still have their barbacoas.

Tombs at Site 59 are quite simple. They consist of shafts excavated into the ground with no further preparation except delineation of the circular tomb mouth, 80–100 centimeters in diameter, with fieldstones and the placing of a pile of rocks within that circular outline.

At Site 42, a huaico site, some looted tombs were circular in form and built of fieldstone. One tomb took advantage of the natural disposition of two large flat rocks and used them to form a tomb wall by adding smaller fieldstones to complete the 80-centimeter circle.

Mortuary Architecture at Geoglyph Sites

Within a sector of destroyed architecture at Site 82/Bo-gataya (see below) there is a cemetery. A few of the burials were placed in prepared circular shafts made of fieldstones set in mud mortar.

SDM 6.4: Nasca 2 Civic-Ceremonial Sites

Upper Valley

Site 106 is a huge huaca elaborated over a naturally bilobal hill (fig. 6.8; CD: supplementary site descriptions: Site 106). It has directly associated habitation areas

on it,⁴ and a walled ditch runs north-south along the lower west side of the mound (I do not believe this is modern). Contemporary habitation sites are located below at Sites 104, 105, 108, 111, 112, 142, and 143. There also are contemporary cemeteries at Sites 105, 142, and 143 and a geoglyph complex at Site 109 that I consider to be associated. I believe it is appropriate to speak of a Site 106 cluster in Nasca 2 times that is composed of these sites (fig. 6.8); some of these sites were occupied in Nasca 1 times, as indicated in the previous chapter.

In Nasca 2 times Site 104 consisted of ten to twelve levels of terraces descending the hillside toward the valley. Today these terraces are poorly defined, though domestic areas can perhaps be recognized on them as roughly ovoid clear areas amid surface rock. Terraces can measure 15.20 by 6.20 meters. A possible grinding stone was observed on one terrace. On another terrace there is a well-made fieldstone cist, 1.60 by 1.50 meters, with side walls 50 centimeters high.

Site 105 had two habitation areas (B, C) and a cemetery (A) in Nasca 2 times. The Sector B habitation zone consists of five levels of poorly defined terraces below the artificially flattened summit of the hill. Sector C's habitation zone is on the lower northwest side of the same hill. It consists of a major wall, 20 meters long, constructed of small boulders, in front of which are a series of terraces, fragments of long double-faced walls (8 meters by 65 centimeters), several small rectangular structures, and at least one large ovoid structure of small boulders that is built on the slope of the hill.

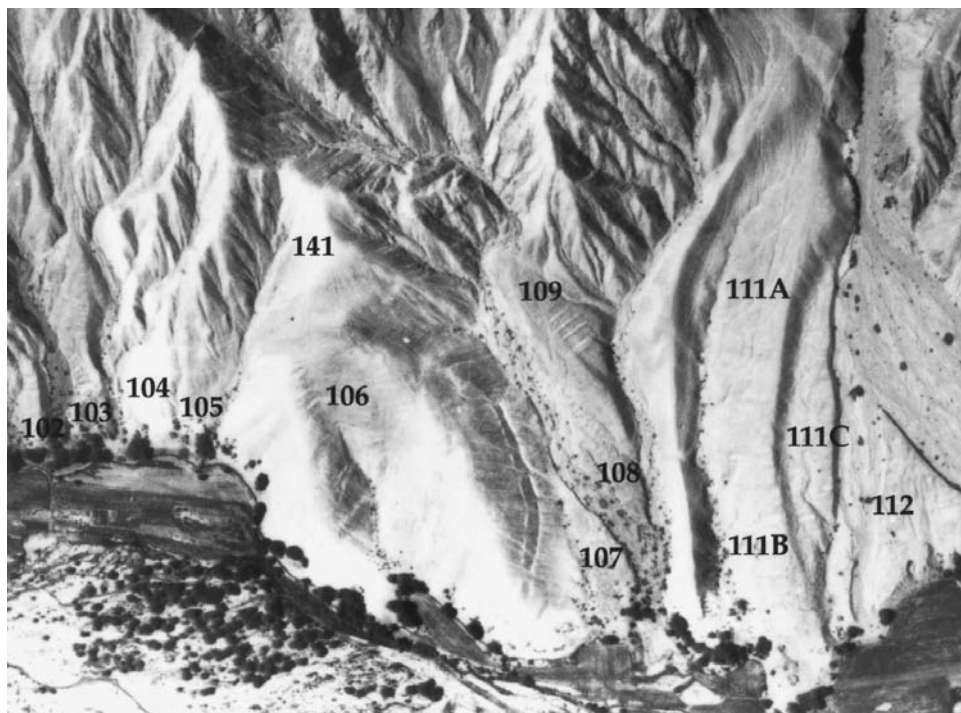
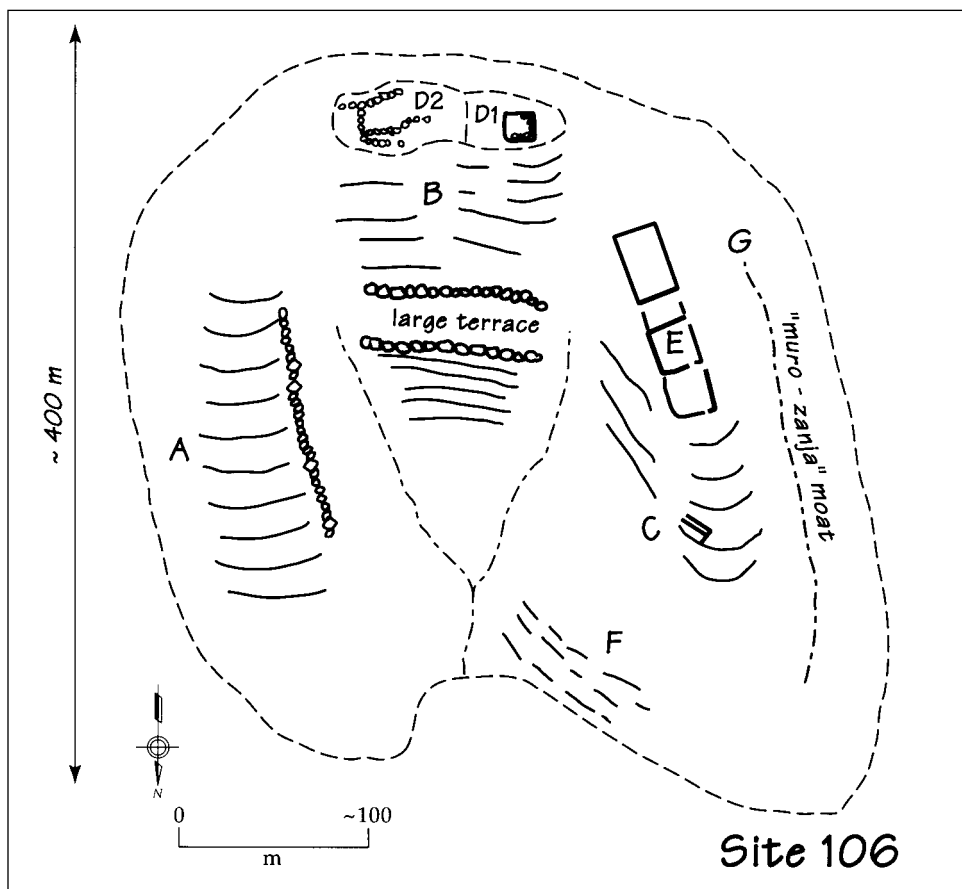
Site 108 consists of a few levels of terraces that descend the slope of a natural terrace toward the valley.

In Nasca 2 times Site 111 (see fig. 5.13) was composed of well-built fieldstone terraces descending the hillside toward the valley. As with Site 104, probable domestic areas are visible on the surface of the terraces as cleared areas amid the rocky surface.

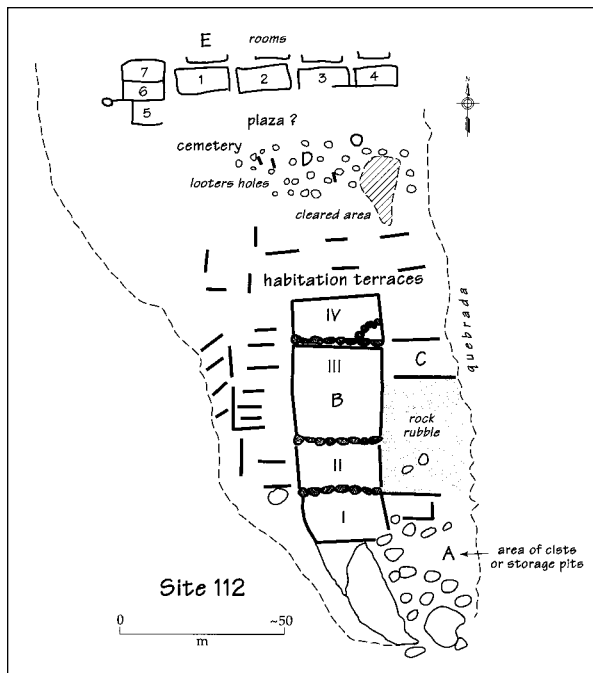
Site 112 was composed of three sectors in Nasca 2 times (fig. 6.9). Sector A is an area of stone-lined cists interpreted as storage pits (there is no evidence of looting that would suggest a mortuary function). Sector B consists of four fieldstone terraces varying in size from 7 by 5 meters to 11 by 9 meters that are interpreted as communal. Sector C consists of smaller terraces on either side of Sector B and extending north of B; they are interpreted as habitation.

Three levels of fieldstone terraces are present at Site 142. The terraces are badly looted, and most looting appears to correspond to LIP tombs.

Site 143 consists of terraces, today eroded, some of which are looted. There are sections of very well made



6.8. The Site 106 complex (detail from SAN aerial photograph SAN 175-70/2745). Sites 142 and 143 are just off the lower right-hand side of the photograph. Sites 102, 103, 107, and 141 are not part of the Site 106 complex but are marked here to locate all sites visible in the photograph.



6.9. Site 112. Sketch plan.

walls that appear to serve as containment walls for the site and as the walls of special chambers, discussed in the previous chapter.

Middle Valley

There were several civic-ceremonial sites in the middle valley in Nasca 2 times. Site 80 (see chapter 5, fig. 5.21) remained a major center. Minor centers also are known, as at Sites 369, 370, 445, 446, and 466.

Site 80's Nasca 2 occupation consists of minor habitation (Sector A), cemeteries (Sector C2), geoglyphs (Sector B), and mounds (Sectors C1a, C4, C5, D1). Two kinds of mounds are associated with Nasca 2 pottery: the completely artificial mounds discussed in the previous chapter and a hill (D1) whose valley-facing natural terraces were modified by the addition of fieldstone contention walls and further ground flattening to create the impression of a platform mound. The creation of huacas through modification of natural hills is well known at Cahuachi, though there the effect was achieved with adobe rather than fieldstone contention walls. It is possible that a ramp ascends the north face of the D1 hillside. On the narrow upper terrace there is the barest outline of small rooms delineated by double-faced fieldstone walls.

At Site 370 a low, square (26 by 26 meters), flat-topped mound was created by mining gravel from a nearby depression and using it to even out the irregularities in the

natural hill. Looters' holes on the mound reveal this gravel and a thick layer of vegetal fiber, also part of the construction.⁵ Another mound at the site was formed by the piling up of a meter-thick layer of garbage (vegetal fiber, rope, other organic material, and Nasca 2 and 3 potsherds), visible in a looters' hole. There is also a rock-delineated cleared area or patio measuring 50 by 66 meters and a massively looted area.

Sites 445 and 466 are hills with deliberately flattened summits. At Site 466 there are two small platforms below the summit that were created by planing the natural terraces of the hill.

Site 446A has low mounds and possible patios and lesser structures in an area measuring 100 by 80 meters; its Nasca 2 occupation appears to decline significantly from Nasca 1 times, to judge by sherd frequencies. In the previous chapter I noted the alternating cleared and looted areas at Site 369 and argued that the former are probably ceremonial space.

Lower Valley

Sites 182, 195, and 202 have Nasca 2 occupations. They were discussed in the previous chapter.

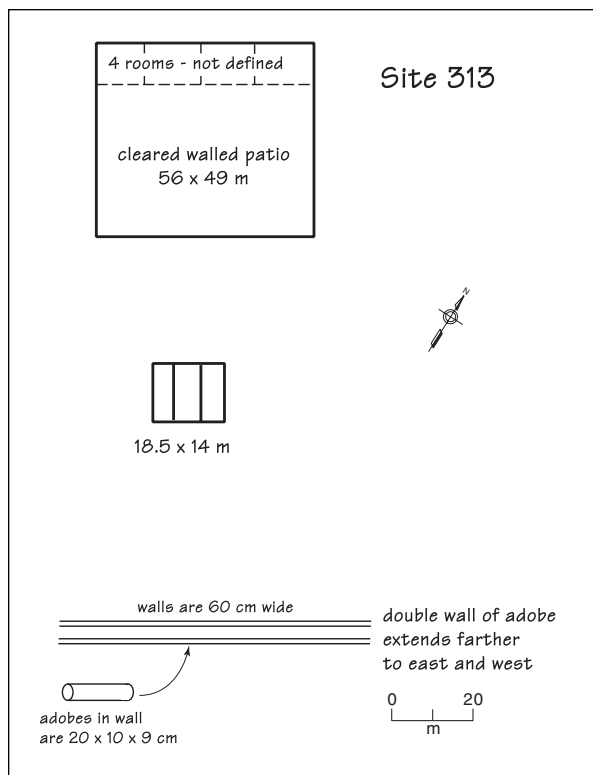
Middle Grande

Sites 279, 287, 301, 305, and 515 are Nasca 1 civic-ceremonial sites that continued to be occupied in Nasca 2 times. Sites 279, 301, and 515 appear to remain the same, and their occupations may be larger. Other civic-ceremonial sites (Sites 500 and 516) occupied in Nasca 1 times appear to have been abandoned in Nasca 2. In addition, two new sites (Sites 313 and 321) were established on the west side of the valley.

In Nasca 2 times there is minor civic-ceremonial architecture at Site 287, which is a major geoglyph field with associated cemeteries (see "geoglyph site 57" in Silverman 1990b: fig. 15). Only the larger of the two small mounds at the site (discussed in chapter 5) appears to continue in use in Nasca 2 times. It is associated with a cleared rectangular area measuring 30 by 18 meters that I interpret as a plaza for the mound.

At Site 305 (chapter 5; see "geoglyph site 65" in Silverman 1990b: fig. 12) the Nasca 2 occupation includes mounds (A2), patios (D2), cemeteries (A1, A7, A12, A13, C1, D1, E2), and geoglyphs (B3).

Site 313 has a small, planned architectural unit made of fieldstones set in mud mortar (fig. 6.10). Today the walls have melted and deflated and are visible only as low dirt ridges covered with some rock. The unit consists of four



6.10. Site 313. Sketch plan.

rooms on the north side of a large, cleared, walled patio. A separate little group of three contiguous rooms is located south of the main unit, and a small mound is due west of these rooms. Two adobe walls delimit the south side of the complex. Due to damage by goat trampling and plowing, it is difficult to be more precise.

Site 321 has been destroyed by agricultural expansion. However, the 1944 aerial photograph shows a more or less trapezoidal structure divided longitudinally in three areas.⁶ A wall, some 250 meters in length, descended parallel to and east of the east wall of the structure. Because there is a great quantity of fine Nasca pottery here and because the associated geoglyph is dateable to Nasca 2 (and later Nasca phases), I believe it is reasonable to attribute the structure to these phases.

SDM 6.5: Nasca 2 Geoglyphs

The Ingenio–middle Grande geoglyphs have been discussed previously (Silverman 1990b; Silverman and Browne 1991). Bearing in mind the methodological difficulties and cautions I have indicated for dating these remains, a distribution of Nasca 2 geoglyphs can be discerned. Comparison of the Nasca 1 (SDM 5.5) and Nasca 2 (SDM 6.5) geoglyph distributions reveals that several

of the earlier geoglyphs appear to continue in use in Nasca 2 times (Sites 117, 287, 305, 360, 449). Other Nasca 1 geoglyphs (at Sites 165, 215, 222, 224, 225, 284, 379, 551) are not represented by Nasca 2 surface collections. Several new geoglyphs are laid out (Sites 80, 82, 109, 166, 207, 210, 242, 311, 321, 378, 426, 544).

Nasca 2 geoglyphs are associated with habitation sites (e.g., Site 117), cemeteries (e.g., Sites 287, 305), and civic-ceremonial sites (e.g., Sites 80, 82, 305, 321, 109 as part of Site 106). They also occur as discrete sites (e.g., Sites 166, 207, 210, 242, 311, 360, 378, 426, 449, 544).

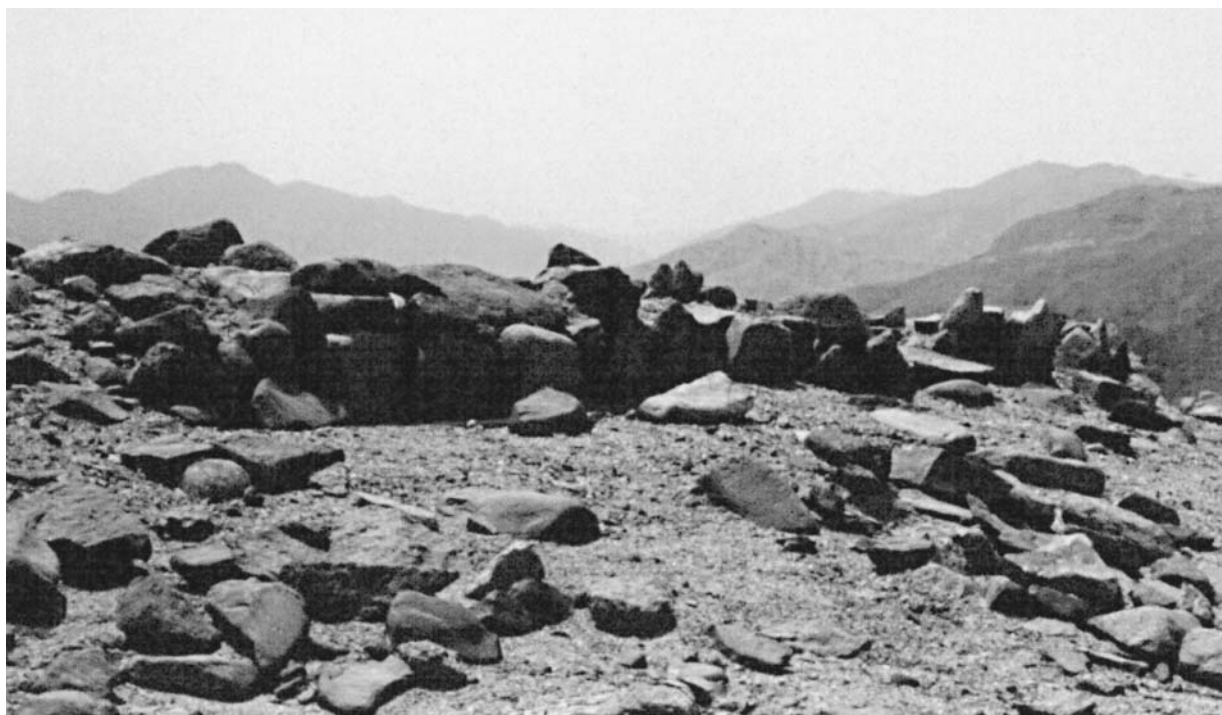
Geoglyphs have a range of forms and configurations in Nasca 2 times: single trapezoids (e.g., Sites 117, 165/409, 210, 311, 321), multiple trapezoids (e.g., Sites 346, 378, 426, 544), straight lines (e.g., Site 360), geoglyph combinations (e.g., Sites 82, 109), campos barridos (e.g., Site 242), and major geoglyph fields (e.g., Sites 80, 166, 207, 287, 305, 449).⁷

Site 166 is particularly intriguing. It occupies the broad alluvial fan of a quebrada—a large, broad, flat, sloping terrace above the valley floor (fig. 6.11). A striking, light-colored, conical-shaped hill is the only supra-surface relief on this terrain. The hill is readily visible from across the valley. The south face of this hill, facing the valley, has been deliberately modified to form a platform mound with two well-built terraces of small fieldstones. Looters probed the top of the hill without success; the profile of one looters' hole reveals conclusively that the hill is natural. In front (south) of the hill there is a cleared apron; immediately to the southwest there is a fragment of a double-faced fieldstone wall, 80 centimeters wide and 4 meters long. A field of geoglyphs emanates from this hill and covers the plain west of it. The geoglyph complex comprises major trapezoids, triangles, straight lines, and zigzags. Some of the geoglyphs cross over each other. The phenomenon of a hill as the center of emanating geoglyphs is well known on the Pampa, where it has been documented by Anthony Aveni (1990). Perhaps the conjunction of the isolated presence of the peculiar natural hill and the wide terrace attracted the attention of the ancient Nasca people.

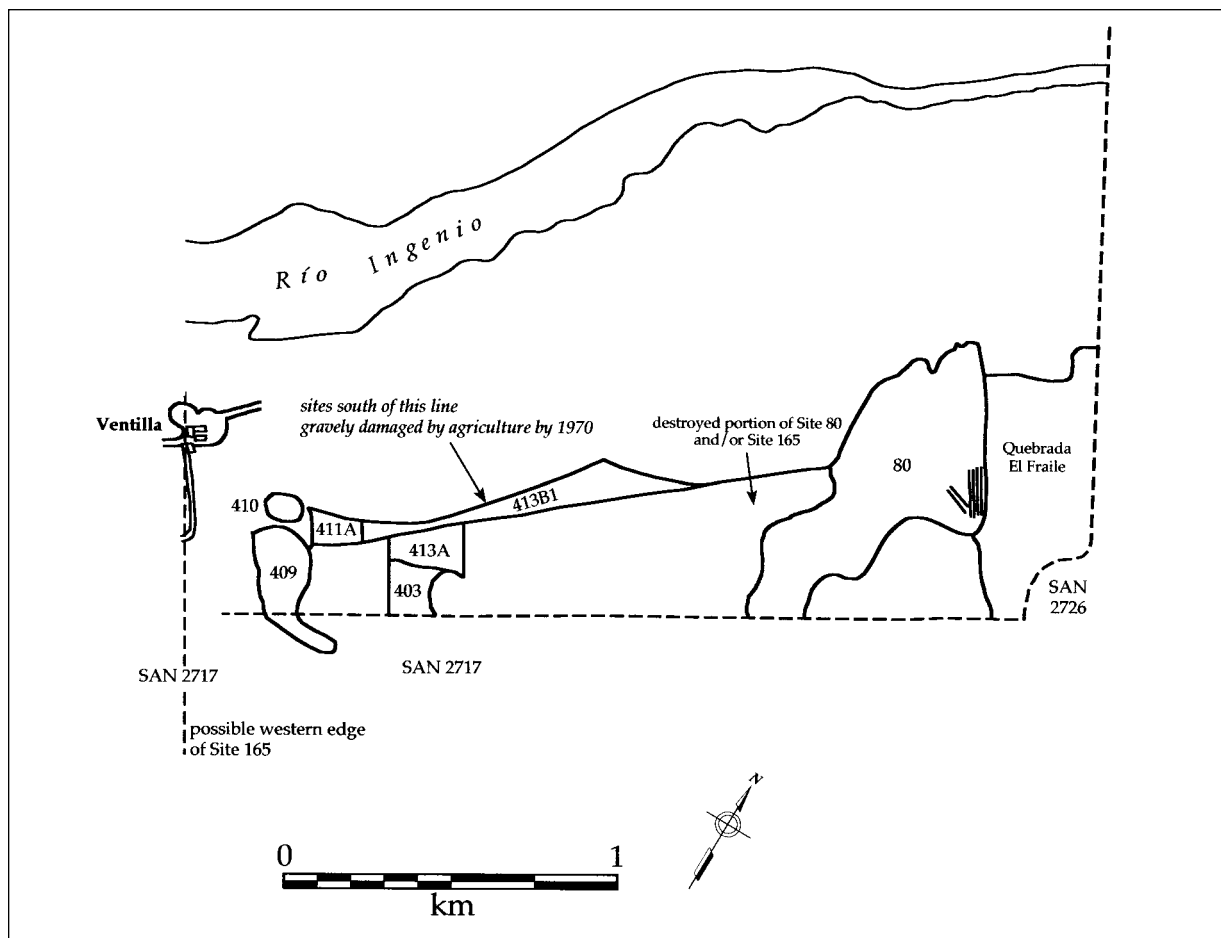
At the time of survey, Site 82/Bogataya was known as a major geoglyph (see Rossel Castro 1977: 200, fig. 45). Aerial photographs reveal that a major architectural complex once existed below the famous geoglyph, but it has been destroyed by agricultural expansion and is undateable. The published geoglyph site is a long trapezoidal geoglyph crisscrossed by a zigzag line. Survey revealed that there are more geoglyphs at Bogataya (these lay beyond coverage of SAN 1975-70/2731). Refugios with unphaseable Nasca sherds overlook the photographed por-



6.11. Site 166. Panoramic view of the geoglyph complex. The conical hill is at lower right.



6.12. Site 82/Bogataya. A platform or mirador overlooks the narrow end of the published geoglyph.



6.13. Site 165. The sectors of the site occupied in Nasca 2 times.

tion of geoglyphs. In addition, a platform or mirador overlooks the narrow end of Rossel Castro's geoglyph (fig. 6.12). The platform is the deliberately flattened summit of a hill. It is outlined by a double-faced field-stone wall 11 meters long and 1.60 meters wide. Once-whole Nasca 2, 4, and 5 vessels and panpipe fragments were recorded on this platform.

In addition to the refugios at Site 82/Bogataya, possible refugios also were identified at Site 311. These consist of four circular fieldstone outlines with varying wide diameters (1.60 meters, 2 meters, 3.30 meters, and 3.60 meters).

Changes

Several dramatic changes occurred in the Ingenio Valley settlement pattern between Nasca 1 and Nasca 2 times. Sites 220, 297, and 455 appear to have been abandoned. A new and large civic-ceremonial center with associated habitation was established at Site 106 (the Site 106 com-

plex). Site 106 proper seems to have been a single component Nasca 2 site. The Site 106 complex was contemporary with the Nasca 2 occupation at Cahuachi. Other major sites continued in use: Site 165 (habitation with encapsulated civic-ceremonial functions; fig. 6.13); Sites 80, 515, and 552 (civic-ceremonial sites with some habitation); and Site 305 (a major geoglyph field). A decline in occupation from Nasca 1 times at both Sites 165 and 552 is possibly suggested by sherd frequencies.

Intrasite and Intersite Differentiation

The Nasca 2 landscape was highly differentiated. In addition to habitation sites of varying size and configuration, there were cemeteries, civic-ceremonial sites, and geoglyphs.

Most Nasca 2 habitation sites are internally undifferentiated. Large or small, most consist of equivalent or redundant remains such as habitation terraces. A few Nasca 2 habitation sites, however, show significant internal dif-

ferentiation of architecture or architecture that is significantly different from that present at the majority of other Nasca 2 habitation sites. In the previous chapter I indicated that encapsulation of civic-ceremonial features sometimes may be indicative of intrasite and intersite stratification. I used Site 111 as an example of a site with better and poorer habitation zones. This site continued to be occupied in Nasca 2 times. Site 87, whose main occupation occurred in Nasca 1, continued to be inhabited in Nasca 2, though possibly with a decrease in occupation. I cannot explain the site's abandonment after Nasca 2 given that it was a perfectly fine domestic settlement, possibly even with a direct relationship to Cahuachi (see chapter 5). In Nasca 2 times Site 165 (fig. 6.13) consisted of ordinary hillside habitation terraces (403, 409), habitation terraces within a walled enclosure (413A), and cemeteries (410, 411A, 413B1). It is appropriate to speak of intrasite differentiation at Site 165 because there are ordinary hillside habitation terraces as well as habitation terraces within a walled enclosure at the site. However, as noted in chapter 5, there is virtually no evidence of mortuary differentiation at Site 165. Indeed, burials here are among the simplest recorded on survey: the cemeteries in 411A and 413B1 are unprepared pits, and at 410 the only elaboration is the presence of barbacoas.

Site 515 (chapter 5; fig. 5.23) is clearly an important site by its size, setting, and integrated domestic and civic-ceremonial functions. The difficulty of functionally categorizing Site 552 was considered in chapter 5. To reiterate, domestic remains at Site 552 occur within the context of a walled enclosure and, therefore, are significantly different from the usual Nasca pattern of unrestricted hillside habitation fieldstone terracing. The site may be considered elite habitation or civic-ceremonial or both. Only excavation can provide a better functional interpretation of the site.

The Site 106 complex is perhaps the most impressive example of intrasite and intersite stratification in Nasca 2 times. The habitation zones on the Site 106 huaca must be considered special by their context, even though in appearance they conform to standard Nasca fieldstone masonry terraces. The other sites associated with Site 106 make the Site 106 cluster the most important Nasca 2 site discovered on survey in terms of size, integration of functions (self-contained habitation zones, geoglyphs, cemeteries, civic-ceremonial architecture, a possible walled ditch), and differentiation of architecture (better and less well constructed habitation terraces, use of walls to demarcate certain habitation areas, a self-contained area of unlooted stone-lined cists interpreted as storage pits, encapsulation of a smaller mound within an area of

terraces and geoglyphs, differentiated tombs as unprepared versus prepared cists, and special mortuary chambers). In my opinion the Site 106 huaca is reminiscent of Unit HH at Cahuachi (see Silverman 1993a: 81, fig. 2.4; Unit HH can be directly dated to Nasca 2 by a potsherd embedded in one of its adobes) in that it is a large bilobal or U-shaped hill that was modified to become impressive civic-ceremonial architecture.

Other civic-ceremonial sites were independent of habitation or appear to have had minimal habitation areas. Site 80 was a major civic-ceremonial site whose dimensions will have to be determined by excavation. There also were small civic-ceremonial sites and encapsulated civic-ceremonial loci such as Sites 182, 195, 202, 279, 301, 313, 321, 369, 370, 445, 446A, and 466. There also were civic-ceremonial features (mounds) at major geoglyph sites such as Sites 305 and 287.

Notes

1. The single Nasca 2 sherd at Nasca 1 Site 220 cannot be attributed to a site function.
2. At most of these sites, there also is evidence of looting within the habitation locus as well.
3. There are few bones, potsherds, or other cultural material on the surface of this sector. It is possible that this cist was originally a storage facility and that subsequently, in later Nasca phases, it was reused for burial. This scenario would explain the massive depredation of Sector D and the paucity of funerary materials. On the other hand, no Nasca 2 sherds were recovered at the habitation sectors of this site, so an unassociated storage function seems peculiarly decontextualized. This same problem of interpretation occurs at Site 340 in Nasca 3 times.
4. Nasca 2 sherds were not recovered in Sector A. I attribute this to the vagaries of preservation given that Nasca 2 pottery was recovered in the other site sectors wherever there was diagnostic material.
5. In contrast to the situation at Site 370, I have categorized as "unknown" the presence of a 50-centimeter-thick fill of vegetal fiber and organic material visible in a looters' hole at Site 471. The fill apparently served to level the natural depression in which the site is located, but I do not know to what end, unless the site is related to the nearby huaca at Site 469, in which case the whole context should date to Nasca 3 on the basis of sherd distributions.
6. I have previously classified Site 321 as a campo barrido (see Silverman 1990b; Silverman and Browne 1991). This is an error because campos barridos are not internally subdivided. The only true geoglyph at Site 321 is a trapezoidal geoglyph touching the southeast end of the structure.
7. Site 207 ("geoglyph site 31D" in Silverman 1990b: fig. 17) is a massive LIP geoglyph field, but enough Nasca sherds exist on the geoglyphs to suggest earlier use.

Nasca 3 Settlement Patterns in the Ingenio and Middle Grande Valleys

A total of 194 Nasca 3 sites and sites with Nasca 3 pottery were located throughout the survey area (SDM 7.1; see CD). Although pottery of the Nasca 3 phase is abundant in general and well known, on the basis of fragmentary surface pottery it can be difficult to differentiate Nasca 3 from the phases that immediately precede and follow it (see description and illustration of Nasca 3 in Proulx 1968; Silverman 1993a: fig. 3.3). Nevertheless, I believe that we were able to identify Nasca 3 potsherds on survey.

The Nasca 3 occupation of the Ingenio and middle Grande Valleys encompasses habitation sites; habitation sites with cemeteries; habitation sites with civic-ceremonial areas; habitation sites with cemeteries and civic-ceremonial areas; habitation sites with cemeteries and geoglyphs; cemeteries; civic-ceremonial sites; sites composed of cemeteries and civic-ceremonial areas; geoglyphs; sites composed of civic-ceremonial areas and geoglyphs; sites composed of cemeteries, civic-ceremonial areas, and geoglyphs; and sites whose function in Nasca 3 times is unknown (CD: spreadsheet 7.1).

SDM 7.2: The Setting, Location, and Spacing of Nasca 3 Habitation Sites

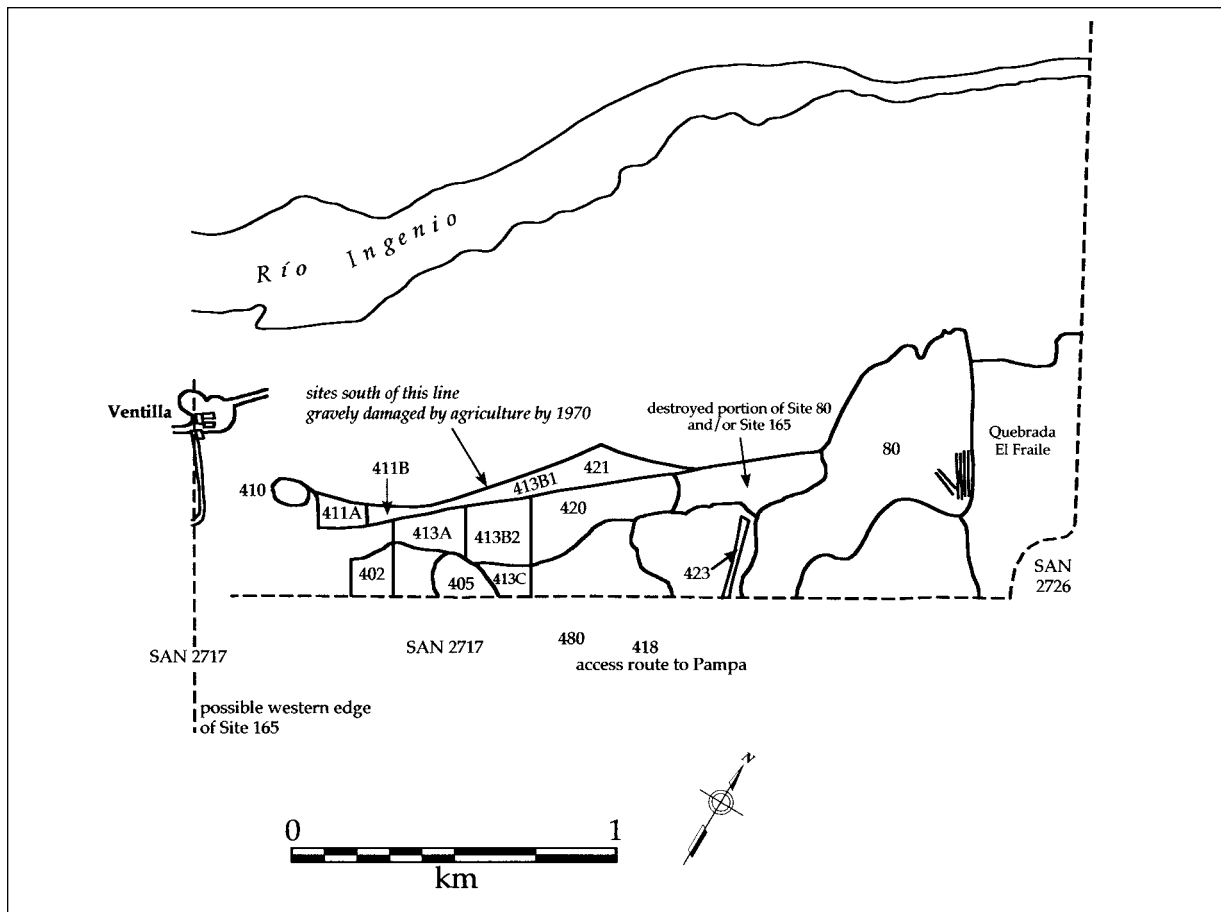
Upper Valley

The distribution of Nasca 3 habitation sites in the upper valley appears to correspond to many of the ethnographically known pukios (CD: Nasca 3 pukios: map, text).

Although I do not know if it is significant, a pairing of sites across the river can be detected for Sites 159 and 160, Sites 39 and 40-41, Sites 55A and 59?, Sites 66 and 70, Sites 90 and 145?, Sites 98 and 99, Sites 118 and 105, and Sites 124 and 108 (possibly Sites 108, 111, 112, and 142 as a cluster in Nasca 3 times). The fairly regular spacing of habitation sites in the upper valley changes into clustering on the south side of the Ingenio River as the middle valley is approached.

Middle Valley

The clustering of sites continues in the middle valley with Sites 340, 342, 343, 344, and 345 as a cluster. Proceeding westward on the south side of the valley, there is a significant gap in occupation until Site 330. The gap is



7.1. Site 165. The sectors of the site occupied in Nasca 3 times.

caused in large part by the extremely steep and fractured nature of the hillsides: they are inappropriate for habitation sites. Topography also accounts, in large measure, for the lack of habitation on the north side of the valley between Sites 124 and 443. In addition, given the width of the middle valley and the expansion of agriculture, it is possible that settlements existed in the valley bottom; indeed, the modern town of El Ingenio is located in the valley bottom in this area. That there was valley bottom habitation also is suggested by the greater distribution of Nasca 3 cemeteries than habitation sites in the middle valley (compare Section 3 of SDM 7.3 and SDM 7.2, respectively). In addition, given the apparent growth of Site 165 in Nasca 3 times from the preceding phase (compare figs. 6.13 and 7.1), it is possible that Site 165 absorbed some of the area's habitation.

Lower Valley

The virtual lack of Nasca 3 habitation sites in the lower valley (see Section 4 of SDM 7.2) is belied by the number

of cemeteries here (see Section 4 of SDM 7.3).¹ As I have argued in the previous two chapters, I take this settlement pattern to be suggestive of the previous existence of habitation sites in the valley bottom or, rather, just off what then was the valley bottom and today is farmed.

Middle Grande

The strong preference for the east side of the middle Grande Valley seen in previous phases continues in Nasca 3 and is confirmed by the number of cemeteries on this side of the valley (see Section 5 of SDM 7.3). The only site on the opposite side of the valley is Site 296, whose nature at this time is uncertain.

Kinds of Nasca 3 Habitation Sites

Nasca 3 people created different kinds of domestic habitats. As in Nasca 1 and Nasca 2 times, the majority of Nasca 3 habitation sites are artificially leveled hillsides

whose contention walls created terraces that more or less closely followed the natural topographic contours and that varied in size in accordance with the topography of the hillside.

Some habitation sites have encapsulated civic-ceremonial areas (Sites 39 and 373). Rarely, a habitation site is in direct association with geoglyphs (Site 330). Burials and/or spatially discrete cemeteries are present at some habitation sites (Sites 9, 30, 31, 36, 40-41, 42, 46, 59, 70, 75, 76, 105, 112, 118, 142, 148, 165, 174, 302, 328, 330, 340, 343?, 344, 502, 520, 521).

Simple Terraced Fieldstone Habitation Sites

Some habitation sites appear to consist only of the terraced living surfaces, that is, to lack structures (Sites 20, 30, 31, 66, 70, 75, 76, 90, 99, 118, 124, 148, 160, 172, 174, 330, 340-342-343-344-345, 356, 388, 425, 443, 520). By way of example, the terraces at Site 388 measured 2 to 3.60 meters wide and 9 to 18.50 meters wide. The contention walls of these terraces are built of large rocks, approximately 45 by 50 centimeters in size. There are three clearly marked communal terraces above ordinary habitation terraces below. Narrow paths appear to connect this upper row of three large terraces. A long, narrow terrace (18.50 by 2 meters) on the west side of the site is connected to the center terrace by a 13-meter-long narrow path. That middle terrace (9 by 3.70 meters) is connected to the terrace on its east side by a 12-meter-long narrow path. The eastern terrace measures 9.50 by 3.60 meters and has a magnificent contention wall of large (45 by 50 centimeters) rocks. Some ten levels of ordinary fieldstone terraces are located below this upper row of three terraces and connecting paths.

Structures at Terraced Habitation Sites

Structures are present on the terraces of some sites (Sites 1, 4, 9, 10, 32, 36, 40-41, 43, 46, 55A, 59, 98, 105, 108, 111, 112, 142, 159, 165). Structures are agglutinated to a greater or lesser degree. Where structures are present on terraces they are made of fieldstones or, less commonly, boulders. The best-made walls are of double-faced fieldstone construction; these walls are up to 1 meter wide. Structures can be square, circular, rectangular with rounded corners, or irregular in shape. More than one form of structure can occur at a single site. Patios delineated by fieldstones also are found at some habitation sites. Storage pits—typically 1.50 meters in diameter and having a circular outline of fieldstones—can occur within build-

ings, on patios, or between these; at Site 99 there is a discrete storage area.

Site 4 consists of rectangular terraces of varying size that descend the hillside and increase in size in accordance with the topography (4 by 2 meters, 3-8 by 3-5 meters, 10 by 6 meters). The terraces are delineated by naturally occurring rock. Circular structures were created amid the giant boulders covering the hillside and are present on some of the terraces. The circular structures are interpreted as houses. They measure about 4 meters in diameter. The terraces are interpreted as patios for outdoor activity. A storage silo, three grinding stones, and a scatter of plainware sherds were observed on one such patio.

At Site 10 circular, square, and rectangular fieldstone structures were constructed on terraces that descend the hillside. A square, or almost square, structure can measure 3-5 meters on a side. The structures are lightly clustered and increase in agglutination at the bottom of the site, where up to eight structures are found. Storage pits are present inside the square structures.

Site 46 (fig. 7.2) is a superb example of a Nasca habitation site. It is located on a hillside that slopes sharply down to the river and is directly below the pukio that waters its sector's land (Hualpoca). The site is unique among those recorded in being divided into two unequal parts by a quebrada that has been buttressed on either side by a massive fieldstone contention wall (fig. 7.3). Within that quebrada, naturally occurring 6-meter-wide levels of descent were reinforced with contention walls, presumably to prevent more huaicos and possibly to serve as living areas. At least one ancient path was noted running through the site. In the two major sectors, terraces of widely varying size follow the contours of the hillside. They vary in shape from rectangular to ovoid to irregular. Smaller terraces (7 by 4 meters) are presumed to be habitation; rectangular, irregular, and circular structures (3 by 1.50 meters) on these terraces are interpreted as houses. Benches are present on some of the small terraces. Large terraces (25 by 8 meters) are interpreted as open air activity/communal areas; some are associated with storage silos; some are subdivided by low walls.

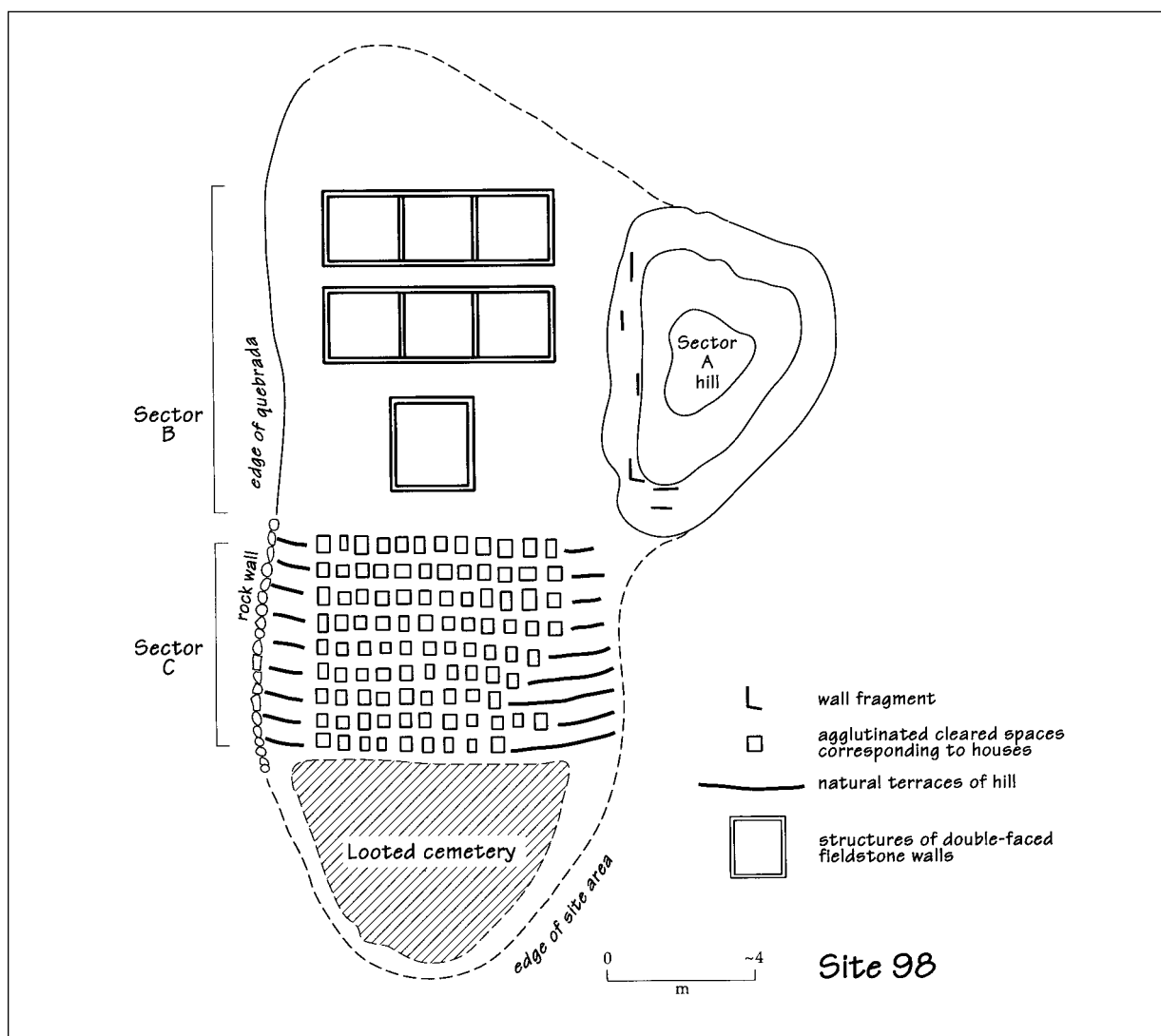
Site 98 (fig. 7.4), another new site in Nasca 3 times, has clearly differentiated communal and domestic areas. The communal area (Sector B) consists of two rows of three each large, square (20 by 20 meters), cleared areas outlined by double-faced fieldstone walls. A single larger, square (22-24 meters on a side) structure is south, below, and separate from the others. A small hill (Sector A) overlooking this sector is covered with fieldstone wall



7.2. Site 46.



7.3. Site 46. Theodolite map.



7.4. Site 98. Sketch plan.

fragments, presumably corresponding to habitational terraces. Below these two sectors there are rows of small, agglutinated terraces that follow the natural contours and levels of the hillside (Sector C). The surfaces of the Sector C terraces were cleared of surface rock, and that rock was used to delineate the terraces and, presumably, to serve as the anchors or foundations of perishable superstructures. There are at least twenty levels of terraces, each with up to ten cleared areas. The internal cleared space measures an average of 4 by 2.50 meters. If all are habitational and contemporary, there were perhaps two hundred houses. No storage pits were observed. Abundant domestic lithic remains (none of obsidian) are present on the site surface: small grinding slabs, hammerstones, nuclei, knives, flakes.

Site 302 is a small, single component habitation site, badly damaged by a huaico and looting and, therefore, difficult to interpret. There appear to be remains of circular fieldstone houses (2.50 meters in diameter) on a small flat terrace. In addition, a straight wall fragment, 1.50 meters in length, was observed. It is interesting that the rock used in construction is larger in size than the rock covering the hillside that defines the terrace to the south; this suggests that it was chosen and brought in to the site.

Partitions of Space

At some terraced hillside sites lacking structures, the surface of some terraces is partitioned by means of a medial

fieldstone wall, generally about 1 meter wide and 40 centimeters high (e.g., Sites 30, 31). Or the division of space on a terrace can be perceived as cleared areas; in the case of Site 388 there can be one to three such areas on any one terrace, each approximately 7 by 5 meters.

Huaico Habitation Sites

The use of huaicos for habitation continued at Sites 42, 55A, and 145. Site 36 was established in Nasca 3 times. At this site more or less circular spaces are defined by the naturally occurring distribution of boulders. In addition, there are actual circular structures built of boulders but very well defined. The surface of these structures is so clear as to appear swept clean. The pottery dating this site and other remains were found around but not in the structures. Small circular structures, interpreted as storage silos (some apparently reused as burial cists), are adjacent to some structures.

Site 99 presents a different scenario in terms of the Nasca perception of huaicos. The site was located on a natural terrace at the edge of a large quebrada, just above cultivated fields to the north. The site consists of a series of eroded terraces, some of which have fieldstone walls. The terraces are larger toward the river because there is more space there. At the southernmost point of the site, in the path of a huaico, the site inhabitants erected a 35-meter-long great wall of rocks and boulders to prevent potential damage to the site from new huaicos.

Refuse Deposits (Basurales) as Habitation Sites

A thin layer of garbage composed of maize, chala, and plainweave cloth was observed in a looters' hole in an LIP habitation sector at Site 250 in the lower valley. The presence of garbage in the looters' hole and Nasca 3 potsherds on the surface of this sector as well as on the adjacent looted cemetery surface strongly suggests that there was a Nasca occupation of the lower valley but that it lies buried and, as has been previously argued, that it was destroyed through agricultural expansion and natural alluvial processes in the valley bottom.

At Site 327 in the middle Grande thin layers of refuse are visible in looters' holes (there are intrusive LIP burials), and refuse is scattered on the site surface. The refuse is composed of chala, maize, guinea pig excrement, human excrement, plainware, and Nasca 3 sherds.

At Site 328 LIP people appear to have swept up earlier Nasca refuse: it is present in piles of gravel associated with large cobblestone walls (or the gravel piles cover

earlier walls made of cobblestones). The refuse consists of chala, maize, guinea pig excrement, burnt bone, plainware, diagnostic Nasca 3 and 4 sherds, cotton threads, and shell. This same garbage can be seen in the profiles of looters' holes.

Thin refuse was observed in looters' holes at Site 520 (vegetal fiber, cane, maize, shell) and Site 521 (vegetal fiber, plainware sherds), which are terraced and nonterraced habitation sites, respectively. Domestic remains (plainware, a stone mortar, encendidores) scattered about the surface of Site 521 confirm that this was a domestic site.

The Confusion Caused by Looting

Site 283 presents the problem of interpretation discussed in previous chapters: looting of tombs may have obscured the fact that these tombs are located in a habitation zone rather than corresponding to a discrete cemetery. Amid the massive looters' holes at Site 283 there is a badly destroyed 1.20-meter section of a 38-centimeter-wide wall made of loaf-shaped adobes. The wall sits on a badly deteriorated and broken apisonado (a traffic-compacted dirt floor) and may have an associated upper floor. Perhaps this wall is a retention wall for a small terrace of low height. Associated with this wall are canes, maize cobs, and Nasca pottery.

In the massively looted sector of Site 340, four and probably six stone-lined cists were observed (similar to fig. 6.7). Habitation is inferred at Site 440B, which is classified as a cemetery but where looting probably has obscured and confused the significance of remains of a domestic character (a small portion of fieldstone contention walls, plainweave textiles, pottery plainware, "odontiform" adobes, a possible pestle) on its surface. In the previous chapter I discussed Site 502, which is a habitation site tentatively identified as the residence of a potter in Nasca 2 times. The site continued to be occupied in Nasca 3 times. At Site 505 the habitation site appears to have been built of perishable architecture, to judge from the traces of cane walls on a badly looted surface (see chapter 5).

Encapsulated Civic-Ceremonial Functions

As previously discussed (chapter 5), Site 39 has an encapsulated civic-ceremonial function in the form of two cleared spurs between which a habitation site is located. Encapsulated civic-ceremonial functions also were recognized at Site 340, where there is a deliberately flattened

and cleared area, and at Site 373, where an artificial, boulder-delineated terrace was created above the habitation terraces on the hillside.

SDM 7.3: Nasca 3 Cemeteries

In the discussion of Nasca 1 burial patterns I indicated the difficulty of dating looted mortuary contexts at multicomponent sites (see chapter 5). Bearing this in mind, the distribution of Nasca 3 cemeteries is presented here.

Nasca 3 people were buried in cemeteries (Sites 7, 72, 79, 101, 114, 144, 149, 151, 157, 173, 175, 191, 193, 214, 216, 221, 226, 227,² 228, 237, 250, 253, 255, 260, 263, 278, 280, 295, 300, 303, 304, 326, 333, 341[?], 358, 359, 366, 371, 380, 383,³ 392, 437, 448, 451, 454, 461, 465, 471, 474, 477, 501, 504, 505, 507, 508, 519), at civic-ceremonial sites (Sites 81, 119, 180, 182, 198, 202, 279, 287, 301, 305, 340, 372, 439, 445, 462, 466, 500, 516), and at habitation sites (see below).

Where present at habitation sites, burials were placed within the domestic area (e.g., Sites 31, 40-41, 59, 75, 118, 142, 174, 283[?], 302, 330, 440, 520, 521) or in spatially discrete cemetery areas at these sites (e.g., Sites 9, 70, 76, 105, 112, 148, 328, 502), although sometimes both situations were observed at a single habitation site (e.g., Site 30; Site 46 can be considered as manifesting both situations in a different way because here earlier structures were not reused for burial; instead, there is a discrete burial area between structures that could have been functioning at the same time).

Most burials were recognized as looters' holes, and most looters' holes indicated burial in shallow, unprepared pits. However, some individuals received more elaborate mortuary treatment. Those sites with mortuary architecture that have not been previously discussed are considered below.

Mortuary Architecture at Cemetery Sites

At Site 144 at least some tombs had fieldstone architecture, to judge from the rock thrown out by the looters; other tombs took advantage of the natural disposition of rock to create tombs in the space between naturally occurring boulders (recall that burials at Site 149 may have had similar fieldstone architecture). There also may be fieldstone cist tombs at Site 173, but they are so covered over by looters' backdirt that they are not easily distinguished. Stone-lined cists also may have existed at Site 221, but the site surface is too destroyed to permit certainty.

At Site 191 Nasca people used an existing wall of river cobbles as the south side or wall of two circular cists. Be-

cause only Nasca 3 and 5 pottery was observed at the site, it is reasonable to think that the tombs are intrusive (i.e., dating to Nasca 5). However, this cannot be asserted on the basis of surface evidence.

At Sites 253, 280, 295, 300, 303, 333, and 380 huarangos and canes from the barbacoas of looted tombs litter the surface, but there is no evidence of tomb architecture; rather, the burials were placed in unprepared pits in the ground (see similar comments in chapters 5 and 6). I also make note here of the presence of river cobbles scattered across the surface of Site 359 that could, conceivably, be the result of the looting of cist tombs, though these were not observed.

Mortuary Architecture at Habitation Sites

At Site 36 cist tombs of circular or irregularly rectangular outline were built of large rocks or boulders. Because they are associated with the large circular structures of this huaico site, it is possible that they were originally storage pits and later reutilized as tombs. At Site 46 there are circular fieldstone cist tombs with barbacoas. At Site 148 there are cist tombs built of fieldstones placed in mud mortar. One of them still has part of a stone slab roof.

Mortuary Architecture at Civic-Ceremonial Sites

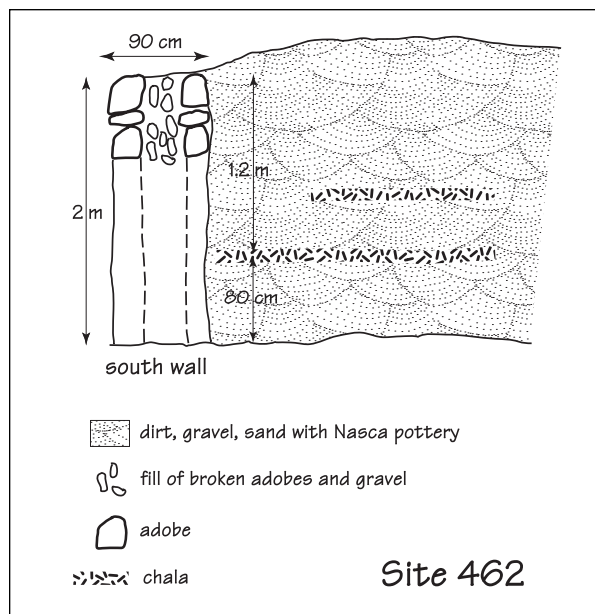
Although Site 305 is extensively looted, and various cemeteries were identified at the site, and although barbaoca remains are common at the site's cemeteries, mortuary architecture was observed in only one possible instance. In Sector I3 there is a looted square (3 by 3 meters) chamber of fallen cobbles.

SDM 7.4: Nasca 3 Civic-Ceremonial Sites

Only one minor civic-ceremonial site, Site 119, was identified in the upper valley; it is located at 550 meters above sea level. Major civic-ceremonial sites exist, however, in the middle valley and middle Grande Valley. Some of these have earlier occupations. Thus Sites 182, 202, 279, 301, 372, 446A, and 516 were discussed in chapter 5, and Sites 313, 321, 445, and 466 were discussed in chapter 6. In this section I present the survey data on civic-ceremonial sites with new occupations in Nasca 3 times.

Upper Valley

Site 119 is the cleared, 85-meter-long sloping summit of a ridge without further architectural elaboration.



7.5. Site 462. Profile showing construction technique of structure.

Middle Valley

In Nasca 3 times Site 80 appears to be composed of mounds (C3), walls that demarcate civic-ceremonial space (D3a–b), geoglyphs (B), and cemeteries (C2) (see fig. 5.21).

At Site 198 a wall (a very low ridge of earth, perhaps adobe) runs almost the whole length of an artificially flattened platform or mound, about 20 by 20 meters, oriented north-south.

In addition to the mounds discussed in the previous chapter, Site 370 also has a cleared area or patio in Nasca 3 times. It measures 50 by 66 meters and is delineated by the rocks cleared from its surface.

Two of the four mounds of Site 376 (first noted in chapter 5) are in direct association with Nasca 3 potsherds.

Site 439 is a hill with three cleared and leveled terraces contained by fieldstones set in mud. The site function is identified as civic-ceremonial rather than a habitational terraced hillside with an encapsulated civic-ceremonial aspect because the hill summit is deliberately flattened, the terraces are exceptionally large (e.g., 50 by 10 meters, 15 by 5 meters), the terraces are not subdivided, and the terraces were the locus of cemeteries whose looting has not brought domestic material to the surface.

At Site 462 an almost square adobe structure sits between a cemetery and a flat, cleared area. The structure measures 24.20 by 23.20 meters. Its fieldstone walls are at least 2 meters high and 90 centimeters wide. They contain a 30-centimeter-wide adobe and rubble core, show-

ing that there are actually two walls rather than double-faced walls, properly speaking (fig. 7.5). Badly looted, the interior of the structure is deliberately filled with sand, rubble (small and medium-size angular fieldstones), maize, Nasca pottery, and thin layers of chala, perhaps to stabilize the fill. It is possible that this structure is part of a system of chambered fill, used to level some natural depression in the hill. Once leveled, an upper construction, today visible only as melted adobe, was built.

At Site 469 the summit of a hill has been artificially raised and leveled by means of a 30-centimeter-thick fill of earth and organic material such as straw (paja) or chala. This huaca is probably related to the 50-centimeter-thick fill of vegetal fiber and organic material visible in a looters' hole at Site 471. The fill apparently served to level the natural depression in which the site is located.

Middle Grande

In Nasca 3 times there is minor civic-ceremonial architecture at Site 287, a major geoglyph field with associated cemeteries ("geoglyph site 57" in Silverman 1990b: fig. 15). The civic-ceremonial architecture consists of the small mound measuring 10 by 7 meters that was used in Nasca 1 times as well (see chapter 5).

There is civic-ceremonial architecture in the form of mounds and plazas (Sectors A2, A4, A9, A11, B1, D2, E3) at Site 305, which is a major geoglyph field (Sectors B2, D2, D4, E5, F, H6, I1) with associated cemeteries (Sectors A1, A5, A7, A12, A13, C1, D1, E1, E2, E7, I3; see "geoglyph site 65" in Silverman 1990b: figs. 10, 12; chapter 5). The apogee of the site is clearly Nasca 3.

Site 500 is a hill artificially modified to have flat terraces and a deliberately flattened summit. As noted previously, the practice of modifying natural hills into truncated mounds has its most spectacular expression at Cahuachi (see discussion in Silverman 1993a). Site 500 is additionally interesting because the profile of a looters' hole reveals a 60-centimeter-thick layer of chala (i.e., construction fill) that served to level the south side of the hill into a flat terrace. A Nasca 3 sherd fell out of this fill.

Site 515 (chapter 5) appears to reach its apogee in Nasca 3 times. As previously indicated, the site is a large hill that has been artificially terraced to be a huge huaca overlooking the middle Grande Valley; it is associated with a significant habitation area.

SDM 7.5: Nasca 3 Geoglyphs

The Ingenio–middle Grande geoglyphs have been discussed previously (Silverman 1990b; Silverman and

Browne 1991). Bearing in mind the methodological difficulties and cautions I have indicated for dating these remains, a distribution of Nasca 3 geoglyphs can be discerned. Like Nasca 1 and Nasca 2 geoglyphs, Nasca 3 geoglyphs begin to appear at the lower end of the upper valley, in this case with Site 109.

Various of the Nasca 1 geoglyphs (Site 165/423) and Nasca 2 geoglyphs (Sites 80, 82/Bogataya, 109, 207, 210, 242, 287, 305, 311, 321, 346, 426, 449, 544) appear to continue in use in Nasca 3 times. Others are not represented in the Nasca 3 surface collections (Nasca 2 Sites 111, 117, 166, 360, 378). Also, new geoglyphs appear (Sites 215, 225, 330, 349, 368, 438, 444, 446B–C, 447, 457, 551). The Site 368 geoglyph is particularly interesting. It is a narrow, long trapezoid, 100 meters long and 6.50 meters wide at the base, on whose west side a minimum of sixteen Nasca 3 pots had been broken.

Nasca 3 geoglyphs are rarely associated with habitation sites (Sites 165/423, 330). They are sometimes associated with cemeteries (e.g., Sites 82/Bogataya, 287, 305, 330) and civic-ceremonial sites (e.g., Sites 80, 287, 305, 321, 446A). They most commonly occur as discrete sites (e.g., Sites 109, 207, 210, 215, 225, 242, 311, 346, 349, 368, 426, 438, 444, 447, 449, 457, 544, 551).

Nasca 3 geoglyphs have a range of forms and configurations: single trapezoids (e.g., Sites 165/423, 210, 311, 321, 349, 368, 551), multiple trapezoids (e.g., Sites 225, 330, 346, 426, 444, 446B–C, 438, 544; see “geoglyph site 9” in Silverman 1990b: fig. 16), geoglyph combinations (e.g., Sites 82/Bogataya, 109, 215, 457; see “geoglyph site 13A” in Silverman 1990b: fig. 13), campos barridos (e.g., Site 242),⁴ and major geoglyph fields (e.g., Sites 207,⁵ 287, 305, 447–449; see “geoglyph sites 31D, 57, 65, 13H” in Silverman 1990b: figs. 17, 15, 12, 14, respectively). Refugios were identified at Sites 224, 225, and 305.

Changes

One of the major changes between Nasca 2 and Nasca 3 times was the abandonment of Site 106 proper and the consequent loss of the Site 106 cluster. However, several of its former constituent habitation sites have Nasca 3 occupations (Sites 105, 108, 111, 112, 142). Nasca 3 is also notable for the growth of certain important sites over their Nasca 2 configuration, specifically, Sites 80, 165, 515, and 552.

Intrasite and Intersite Differentiation

The Nasca 3 landscape was highly differentiated. In addition to habitation sites of varying size and configuration, there were cemeteries, civic-ceremonial sites, and geoglyphs.

In Nasca 3 times Site 165 appears to grow with the addition of several new areas (fig. 7.1). It is composed of hillside habitation terraces (402, 405, 413C); habitation terraces within a walled enclosure (413A); platforms, patios, and mounds within a walled enclosure (420); civic-ceremonial mounds (421, 413B2); a plaza between mounds (421); a presumably civic-ceremonial rectangular fieldstone structure (480); cemeteries (410, 411A, 411B, 413B1); geoglyphs (423); and an access route to the Pampa (418). As noted in chapters 5 and 6, however, there is virtually no evidence of mortuary differentiation at Site 165. Indeed, burials here are among the simplest recorded on survey: the cemeteries in 411A–B and 413B1 are unprepared pits, and at 410 the only elaboration is the presence of barbacoas.

Site 515 remained an important huaca with associated habitation. Site 552 had a major occupation at this time, though I have indicated the difficulty of functionally categorizing this walled compound without excavation.

In previous chapters I demonstrated that site size does not necessarily correlate with internal differentiation at habitation sites. Most Nasca 3 habitation sites are undifferentiated and, in my opinion, equivalent or redundant: large or small, they consist of uniform remains such as terraces. At other habitation sites there is differentiation of space, but it appears to be quite quotidian in nature. Thus at Site 66 there is a large, fieldstone-delineated terrace, 28 by 10 meters, presumably communal, that is located below a series of small terraces that ascend the hillside above it. At Site 340 proper there is a large rectangular cleared area and smaller cleared areas delineated by fieldstones. These are interpreted as communal and habitation areas, respectively; there also is a looted area immediately north of these and above the valley floor that may have been a storage area.

However, several Nasca 3 habitation sites show internal differentiation of architecture or architecture that is significantly different from that present at the majority of other Nasca 3 habitation sites. Thus some sites have important civic-ceremonial attributes in addition to the evidence that supports their identification as habitation sites (see discussion in chapter 5). Encapsulation of civic-ceremonial features may be indicative of intra- and intersite stratification, but this is not necessarily so (see dis-

cussion in chapter 5). I have previously noted that Site 111's mound is constructed of thin layers of vegetal fiber in a manner reminiscent of constructions at Cahuachi and that Site 111 is a large habitation site with two areas of better and poorer habitation in Nasca 1 through Nasca 3 times (see chapter 5). Sites 340, 341, 342, 343, 344, 345, and 346 are a single site in Nasca 3 times comprising domestic loci (ordinary habitation terraces at Sites 340, 342, 343, 344, 345), cemeteries (Sites 341?, 343?, 344), an encapsulated civic-ceremonial sector in the form of a flat, cleared area (Site 340), and trapezoidal geoglyphs (Site 346).

Other sites are exclusively civic-ceremonial or have minor habitation areas. Site 80 (figs. 4.7, 5.21), whose dimensions will have to be determined by excavation, is a large and complex civic-ceremonial site that may have reached its apogee in Nasca 3 times. Other civic-ceremonial sites or encapsulated civic-ceremonial loci are small (e.g., Sites 182, 198, 202, 279, 301, 313, 321, 370, 372, 376, 439, 445, 446A, 462, 466, 469, 500, and 516). There also are civic-ceremonial features (mounds) at major geoglyph sites (e.g., Sites 305 and 287).

Notes

1. The nature of Site 220 in Nasca 3 times is unknown.
2. At Site 227 there also appears to be a single small Nasca mound constructed of loaf-shaped adobes and a possible habitation area (both badly damaged by bulldozers and modern construction) that may correspond to Nasca 3 or MH or both. Only excavation will be able to further elucidate this site.
3. One possible wall fragment is visible on the disturbed surface as a low mud ridge.
4. It is possible that Site 256 also may be a Nasca 3 campo barrido, but I am so uncertain that I do not include it in this chapter (rather, see chapter 10). Similarly, it is possible that Site 269 should be included here as a campo barrido. The issue with Site 269 is that pieces of Nasca 3 and Nasca 5 pottery were found along the perimetral wall of the deliberately cleared area that is Site 269. Either Nasca 7, Nasca 8/Loro, and/or MH people swept up materials of an earlier time to create a cleared field within which to place their burials, or their burials are intrusive into Nasca campos barridos, in which case Site 269 should be classified as a geoglyph in this chapter.
5. Site 207 (Silverman 1990b: fig. 17) is a massive LIP geoglyph field, but enough Nasca sherds exist on the geoglyphs to suggest earlier use.

Nasca 4 Settlement Patterns in the Ingenio and Middle Grande Valleys

Nasca 4 pottery was found on the surface of eighty-five sites located throughout the survey area (SDM 8.1). These sites encompass habitation sites with and without associated cemeteries, discrete cemeteries, civic-ceremonial sites with and without cemeteries, geoglyphs, and sites whose function in Nasca 4 times is unknown (CD: spreadsheet 8.1).

The Identification of Nasca 4 in the Field

I have previously expressed doubts about the chronological reality of Nasca 4, the fourth stylistic phase of the Nasca ceramic sequence (see, e.g., Silverman 1993a: 318, 1993b: 112–113; see also Browne 1992: 80). My concern with Nasca 4 has been based on several lines of reasoning. First, I have been bothered by the decline in sites between Nasca 3 and Nasca 5 times (compare the Nasca 3, 4, and 5 site distribution maps). Second, Nasca 4 appears to encompass a briefer span of time than Nasca 3 (see Proulx 1968: 100). Third, in the field it has been difficult to discriminate Nasca 4 from Nasca 3 potsherds because of the limited number of particular traits that differen-

tiate these contiguous phases; they were elaborated into a sequence on the basis of whole vessels (see Proulx 1968). Nevertheless, I also have indicated that if the ceramic sequence is correct, then the dramatic decline of Cahuachi in Nasca 4, which was noted by Rowe (1963: 11–12), is significant (see Silverman 1993a: 318, 1993b). And because of the fine relative chronology I have been able to show that some construction at Cahuachi continued after the Nasca 3 apogee of the site, specifically, at the Room of the Posts (see Silverman 1993a: 187, fig. 13.41). I conclude that Nasca 4 is a temporally valid phase and that the disruptions that Rowe and I see on the landscape are real.

SDM 8.2: The Setting, Location, and Spacing of Nasca 4 Habitation Sites

Upper Valley

The distribution of habitation sites in the upper valley appears to show the prehispanic use of some but not all of the ethnographically known pukios (CD: Nasca 4 pukios: map, text). Overall, the Nasca 4 occupation of the

upper valley is light in density. Only in the rich Condoya sector is there more than one site apparently taking advantage of readily irrigated land.

Middle Valley

The survey data suggest that the middle valley was virtually abandoned in Nasca 4 times, since no Nasca 4 habitation sites are known on the north side and, at most, only four widely spaced habitation sites have been registered on the south side. These are Sites 344, 172, 388E, and also Site 402 within what was formerly Site 165 (Section 3 of SDM 8.2).

Lower Valley

With the exception of a handful of Nasca 4 sherds at Site 220 (which clearly is a Nasca 1 habitation site; see chapter 5), the lower valley appears abandoned in Nasca 4 times. I have argued in previous chapters that the lack of habitation sites in the lower valley settlement pattern may be due to destruction by agricultural expansion and burial by alluvium. Whether this is true for Nasca 4 times or whether the lack of sites is real remains to be determined by deep coring of the valley bottom. Yet arguing for at least the partial validity of the surface is the general decline in Nasca 4 settlement overall.

Middle Grande

In the middle Grande the same exclusive preference for the east bank, noted in previous chapters, continues in Nasca 4 times. But there are fewer sites at this time. And, as indicated below, the two sites (Sites 328, 521) identified here are refuse accumulations rather than architectural sites.

Kinds of Nasca 4 Habitation Sites

Nasca 4 habitation sites exemplify most of the categories described in previous chapters. There are terraced hillside habitation sites with structures (Sites 9, 19, 21, 40, 43, 46, 59, 99, 142) and terraced hillside habitation sites without structures (Sites 11, 30, 64, 90, 104B, 118-119, 163, 344, 388E, 402 [within what was formerly 165]). Some habitation sites have an encapsulated civic-ceremonial area (Sites 39, 373). Occasionally, living sites were accommodated to huaicos (Sites 42, 55A). Some habitation sites are refuse deposits (Sites 328, 521). Others are domestic occupations of unknown configuration that are buried un-

der later occupations (Site 172). Some habitation sites are associated with burials and/or spatially discrete cemetery areas (Sites 9, 11, 30, 40, 42, 43, 46, 59, 118-119, 142, 163, 328, 344, 521). Site 19 appears to be the only new settlement in the survey area in Nasca 4 times. It consists of three circular fieldstone structures (diameters: 7 meters, 7.50 meters, 11 meters) above which there are a few fieldstone terraces.

At Site 104 Nasca 4 people established themselves in a new sector of the site, separated from earlier habitation by a fieldstone wall. The Nasca 4 sector consists of six levels of fieldstone terraces that descend the hillside to the valley. One terrace measures 15.20 by 6.20 meters. A circular, stone-lined storage pit was observed on the lowest terrace; it measures 1.65 by 1.50 meters in diameter and is 50 centimeters deep. Similarly, at Site 388 Nasca 4 people shifted to the lower east side of the hill. Here they built a few fieldstone terraces, today poorly preserved.

SDM 8.3: Nasca 4 Cemeteries

In the discussion of Nasca 1 burial patterns I indicated the difficulty of dating looted mortuary contexts at multicomponent sites (see chapter 5). Bearing this in mind, the distribution of Nasca 4 cemeteries is considered below.

Some of the Nasca 4 burial sites are discrete cemeteries (Sites 7, 72, 76, 101, 144, 149, 157, 175, 180, 227, 228, 237, 283, 299A, 341, 370, 371, 454, 466, 477, 502, 505). In other cases burials occur at habitation sites (Sites 9, 30, 40, 42, 43, 46, 59, 118-119, 142, 328, 344, 521) and civic-ceremonial centers (182, 198, 202, 279, 305, 439). Where present at habitation sites, the dead were placed in the actual living zone (Sites 40, 59, 142, 328, 344, 521) or in spatially discrete cemetery areas at these sites (Sites 9, 30, 42, 43), although sometimes both situations were observed at a single site (e.g., Sites 46, 118-119).

Most burials were recognized as looters' holes, and most looters' holes indicated burial in shallow, unprepared pits placed directly in the ground (e.g., Site 299A, which is used for the first time in Nasca 4). However, some individuals were placed in architecturally configured burial facilities. There is mortuary architecture at cemeteries in Sites 7, 72, 101, 144, 149, 157, 175, 237, and 341. There is mortuary architecture at habitation sites in Sites 30, 42, 46, 59, 119, and 142. There is mortuary architecture at Site 82/Bogataya (the famous geoglyph; see Rossel Castro 1977). All these sites with mortuary architecture have been discussed in previous chapters; that information will not be repeated in this chapter.



8.1. Site 180. SAN aerial photograph 524/60 (1944). The site is visible on the extreme right, cut by the Pan-American Highway and with the north portion of the site already destroyed by agriculture but with its outline still visible in the fields (note Site 552, labeled, in lower right portion of photo).

Site 180

Site 180 is located on the south side of the valley at the base of the major quebrada running up to the Pampa (through which the modern Pan-American Highway passes), just east of the angostura separating the middle and lower Ingenio Valley. The 1944 aerial photographs (SAN 524-60, 524-99; fig. 8.1) clearly show a rectangular compound with subdivisions and interior mounds on the south side of the Pan-American Highway. On the same photographs, the outline of another or adjacent rectangular compound can be perceived in the cultivated plot on the north side of the Pan-American Highway. On the 1970 aerial photographs (SAN 175-70: 2715) the northern architecture is no longer visible, the southern compound has been massively looted, and modern structures are beginning to encroach on the eastern end of the site. When surveyed in 1988–89, Site 180 had been devastated by further looting, bulldozing, and continued modern construction of a shantytown.

My only information on the site is a personal communication from Giuseppe Orefici, who excavated at Site 180 (his “San José” or “Bajada de San José” site) in 1982. Orefici located thirteen burials; he found no evidence of habitation. Photographs and information kindly shared with me indicate that Tombs 3 and 4 contained Nasca 4 pottery. Tombs 1, 2, 6, and 7 contained unphaseable early

Nasca pottery. Tomb 5 cannot be dated because its only contents were a plainware olla. In the sand of Tomb 8 a small, empty plainware olla was found. Tomb 9 was an already looted funerary urn. Tomb 10 contained an individual associated with post-Nasca pottery. Tomb 11 had been looted previously. Tomb 12 had no associated pottery. Tomb 13 contained a utilitarian gourd and a *Choromytilus* valve. At least some tombs were intrusive in a structure Orefici describes as an artificial platform at the south end of the site. If so, this structure cannot be more recent than Nasca 4. Orefici refers to ceremonial enclosures built of river cobbles set in mud mortar located on the east side of the site. These must be the structures visible in the 1944 aerial photographs. Thus Site 180 has a precemetery Nasca occupation; a Nasca 4 and early Nasca cemetery occupation; and a post-Nasca occupation corresponding to the enclosures.

SDM 8.4: Nasca 4 Civic-Ceremonial Sites

Several civic-ceremonial sites, previously discussed, have Nasca 4 occupations. In the middle valley these are Sites 376, 439, 445, and 469. In the angostura these are Sites 182, 198, and 202. In the middle Grande these are Sites 279, 305 (Sector A2 mound; Sector E4a ridged rectangular area), and 313. A new civic-ceremonial focus may

begin to develop in Sector B6 (a mound composed of dirt and rock rubble) of Site 81 in the middle valley (see fig. 9.11b).

SDM 8.5: Nasca 4 Geoglyphs

The Ingenio–middle Grande geoglyphs have been discussed previously (Silverman 1990; Silverman and Browne 1991). Bearing in mind the methodological difficulties and cautions I have indicated for dating these remains, a distribution of Nasca 4 geoglyphs can be discerned.

Nasca 4 potsherds were found on the surface of nine geoglyphs: Sites 80, 390B, 446, 447, and 449 in the middle valley; Site 207 in the lower valley; and Sites 305, 307, and 311 in the middle Grande. Of these, Sites 307 and 390B appear to be new geoglyph sites. Site 307 consists of a combination of a long, narrow trapezoid (185 meters long, 19.50 meters at base, 3 meters at tip) descending a hillside toward the valley in an almost north-south direction, two narrow, long lines running parallel to its west side, and at least two lines running perpendicular to its base; it may be elaborated over an earlier trapezoid and line. The Site 390B geoglyph is a trapezoid measuring 42 meters long, 5.70 meters wide at its base, and somewhat under 3.70 meters wide at its tip. In addition, Nasca 4 pottery was found on the platform overlooking the Site 82/Bogataya geoglyphs (see chapter 6).

Changes

As indicated in the introduction to this chapter, the decline of Cahuachi in Nasca 4 times is paralleled in the survey's settlement pattern data. Many of the habitation sites discovered on survey have Nasca 3 and 5 components but without Nasca 4 or with comparatively few sherds of that phase. The most startling aspect of the Nasca 4 settlement pattern in the survey area is the disappearance of Site 165 as a great habitation site with encapsulated civic-ceremonial functions. Only Site (formerly Sector) 402 is occupied. Interestingly, there is a significant amount of decorated pottery here, and among this surface pottery bulbous vase forms are dominant (note that bulbous vases are common in Proulx's [1968: 76] sample of Nasca 4 pottery from Nazca). Only the geoglyphs at the formerly great Site 80 civic-ceremonial center have Nasca 4 remains. Site 552 has no Nasca 4 occupation, and to all intents and purposes Site 515 is abandoned (only one Nasca 4 sherd was identified).

Intrasite and Intersite Differentiation

There is a lack of any habitation site or civic-ceremonial center of notable size and complexity. Consequently, there is no evidence of intrasite or intersite differentiation in Nasca 4 times in the survey area.

Nasca 5 Settlement Patterns in the Ingenio and Middle Grande Valleys

Nasca 5 pottery was found on the surface of 157 sites (SDM 9.1). Nasca 5 pottery is the most varied of any phase in the Nasca ceramic sequence because of its three distinct stylistic manifestations: Conservative Monumental, Progressive Monumental, and Bizarre Innovation (see Blagg 1975 for definitions and illustrated examples; also see Roark 1965). The latter two strains are unmistakable in whole form and usually can be identified as sherds so long as a decorated portion of the vessel is represented. The Conservative Monumental style, however, can be readily confused with earlier Nasca phases unless very specific diagnostic features are fortuitously preserved on sherds.

Nasca 5 sites are distributed throughout the survey area. They are identified as habitation sites; habitation sites with cemeteries; habitation sites with cemeteries and geoglyphs; habitation sites with civic-ceremonial areas; habitation sites with cemeteries, civic-ceremonial areas, and geoglyphs; cemeteries; sites composed of cemeteries and civic-ceremonial areas; sites composed of cemeteries, civic-ceremonial areas, and geoglyphs; sites composed of cemeteries and geoglyphs; civic-ceremonial sites; civic-ceremonial sites with geoglyphs; geoglyphs;

special activity areas; and sites whose function in Nasca 5 times is unknown (CD: spreadsheet 9.1).

SDM 9.2: The Setting, Location, and Spacing of Nasca 5 Habitation Sites

Upper Valley

The distribution of habitation sites in the upper valley appears to show the prehispanic use of various of the ethnographically known pukios (CD: Nasca 5 pukios: map, text). But site distribution must be considered light given the absence of occupation in some of the pukio sectors.

Middle Valley

The long gap in occupation on the north side of the valley between Site 90 (upper valley) and Site 363 (middle valley) is not readily explicable given the density of Nasca sites at other times (see composite in fig. 3.1a). Within the middle valley, the gap between Sites 363 and 443 is only partially explained by extremely steep topography,

since this geomorphological configuration ends at the previously occupied Site 367, west of which the hillsides are occupied at other times. The long gap between Site 443 and the cluster of Sites 425, 456, and 455 is explicable as the result of site destruction (major earthmoving activity is clearly visible in the field and on the 1970 SAN series 175-70 photographs 2726–2731). Major surface disturbance appears to have obliterated cemeteries, too, since these are rare on the north side of the valley in contrast to the situation on the south bank (see below).

On the south side of the valley, sites are fairly evenly spaced, either as clusters or individually. The sites are the Site 340-341-342-343-345-346 cluster, Site 347, Site 330, the Site 172-174-176-75 cluster, Site 80, Site 400, and Site 397.¹

Lower Valley

No Nasca 5 habitation sites were identified in the lower valley.² Given the frequency of cemeteries, however, it is likely that some habitation sites are buried beneath the alluvium in the valley bottom, that others have been destroyed by earthmoving activities, and that others have been obscured by looting (possibly Sites 190, 191, 260).

Middle Grande

Similarly, few Nasca 5 domestic occupations were identified in the middle Grande. Here, too, it is assumed that there was valley-bottom settlement given the number of cemeteries in this sector. Also, looting in some cemeteries has obscured the habitation zones in which the burials were intrusive (e.g., as at Sites 503 and 505, possibly at Site 301).³

Kinds of Nasca 5 Habitation Sites

Nasca 5 habitation sites have differing configurations. As in previous phases, the majority of habitation sites are artificially leveled hillsides whose contention walls create terraces that more or less closely follow the natural topographic contours and that vary in size in accordance with the topography of the hillside. The terraces are considered residential, and, in some cases, there also are terraces that correspond to communal or outdoor activity areas (e.g., as at Sites 9 and 176). In addition, Nasca 5 people accommodated living sites within huaicos (Site 42).

Fieldstone structures are present on the terraces of some sites (Sites 9, 22, 32, 40, 43, 46, 56, 107, 176, 347, 400). These structures may be circular, square, rectangular,

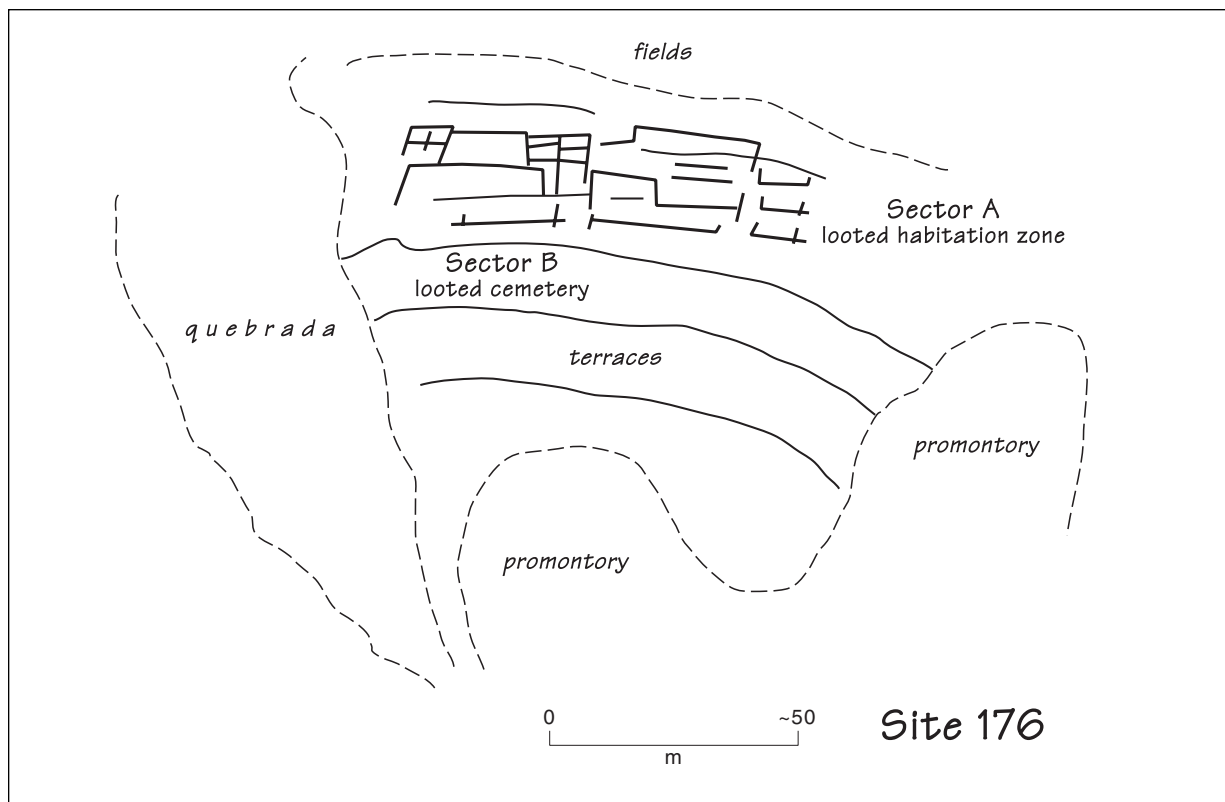
and/or irregular. Structures appear to be absent at other sites (Sites 11, 30, 75, 80A, 90, 99, 104, 106A, 174, 330, the 340-342-343-345 habitation cluster, 363, 397, 425, 443, 456). At several terraced hillside sites lacking structures, the surface of some terraces is partitioned by means of a medial fieldstone wall (e.g., Sites 20, 70). Storage facilities—not considered under the rubric of structures—were observed at some habitation sites (Sites 9, 20, 43, 46, 176; see discussion of Sites 340C and 343D).

Some habitation sites have encapsulated civic-ceremonial areas (see discussion below of Sites 75, the 340 cluster, 373, 400). Rarely, a habitation locus is in direct association with geoglyphs (e.g., Sites 80A, 165, 330, Site 346 within the Site 340 cluster).

Habitation sites that were newly established in Nasca 5 times (Sites 22, 56, 107, 176) are now discussed. At Site 22 there are incomplete circular structures, part of whose well-built fieldstone walls form the contention walls for the terraces at the site. In addition, rough-hewn walls of larger and more angular rocks abut these walls. Site 56 is rustic in appearance. It consists of some ten fieldstone terraces on which irregular and circular fieldstone structures are irregularly distributed. Site 107 consists of larger and smaller terraces. The largest ones are rectangular in shape and are defined by well-preserved fieldstone walls. On these terraces there are some twenty square structures, recognized by their fieldstone outlines. Site 176 consists of terraces, patios (up to 30 by 15 meters in area), and circular storage pits made of planed fieldstones set in mud mortar (fig. 9.1).

Habitational Sites That Include an Encapsulated Ceremonial Function

Site 373 was discussed in chapter 5. Site 75's encapsulated ceremonial function is a mound (the result of modifying a hill summit) surrounded by narrow terraces in the context of a habitation site with apparently contemporary cemeteries. Site 340 proper appears to have an encapsulated ceremonial function consisting of a deliberately cleared and flattened area. If we consider the entire Site 340 cluster in Nasca 5 times, then Site 341's deliberately flattened, cleared, and terraced spur also would fit within the definition of Nasca ceremonial space. Site 400 (fig. 9.2) is composed of four well-defined terraces above which is a bicameral structure built of double-faced fieldstone walls. Behind this structure there is a cleared terrace. A compartmentalized fieldstone structure is located to the west. Pending excavation, I suggest that the structures and cleared space constituted some kind of nondomestic feature at the site.



9.1. Site 176. Sketch plan.

SDM 9.3: Nasca 5 Cemeteries

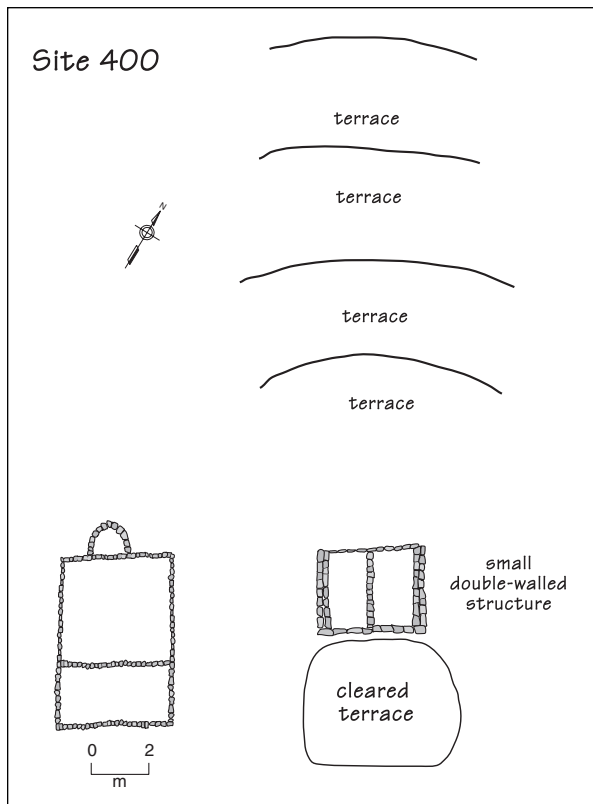
I have indicated the difficulty of dating looted mortuary contexts at multicomponent sites (see chapter 5). Nevertheless, it appears that Nasca 5 people were buried in discrete cemeteries (Sites 29, 55?, 72, 76, 101, 102, 144, 149, 150, 151, 157, 167, 173, 175, 190, 191, 200, 221, 227, 250, 255, 260, 280, 295, 299, 303, 326, 331, 357, 358, 361, 370, 371, 383, 465, 471, 477, 478, 504, 508), at civic-ceremonial sites and/or sites with civic-ceremonial aspects or geoglyphs (Sites 79 [see discussion in separate section below], 81, 182, 195, 198, 296A2 [see discussion in separate section below], 301, 305, 341, 386, 439, 447, 448, 462), and at habitation sites (Sites 9, 22, 32, 40, 42, 43, 46, 70, 75, 165, 176, the 340 cluster). At habitation sites burials were placed in the domestic area (e.g., Sites 22, 30, 40, 80, 174, 330) or in spatially discrete cemetery areas at these sites (e.g., Sites 9, 42, 43, 70, 165, 503), although sometimes both situations were observed at a single habitation site (e.g., Sites 46, 75). Most burials were recognized as looters' holes, and most looters' holes indicated burial in shallow, unprepared pits. However, some individuals received more elaborate mortuary treatment, as discussed below.

Mortuary Architecture at Cemetery Sites

Mortuary architecture was observed at Sites 29, 55B?, 72, 101, 144, 157, 175, 191, 227, 299B, and 358. Data presented in previous chapters will not be repeated here.

Although almost completely destroyed by agricultural activity, several tombs at Site 29 preserve enough of their form to be described. One tomb is a 1.50-meter-wide circular fieldstone shaft that was placed within a double-walled (not double-faced) fieldstone square enclosure measuring 3.80 meters on a side; in profile the layout has a stepped appearance (fig. 9.3). Another tomb is a simple square chamber built with large fieldstones and measuring 1.40 meters on a side. It is important to note, however, that the dominant pottery at this site is early MH in date.

Sector B of Site 55 is a massively looted cemetery intrusive in a Nasca site (fig. 9.4). Area B2 at the site is a rectangular building of double-faced fieldstone masonry with internal divisions and an appendix to the east side that consists of three long rooms. The collapsed walls are preserved to 1.70 meters in height and measure 60 centimeters in width. Associated pottery is Nasca 5 and MH1B in date. I consider it possible that this building



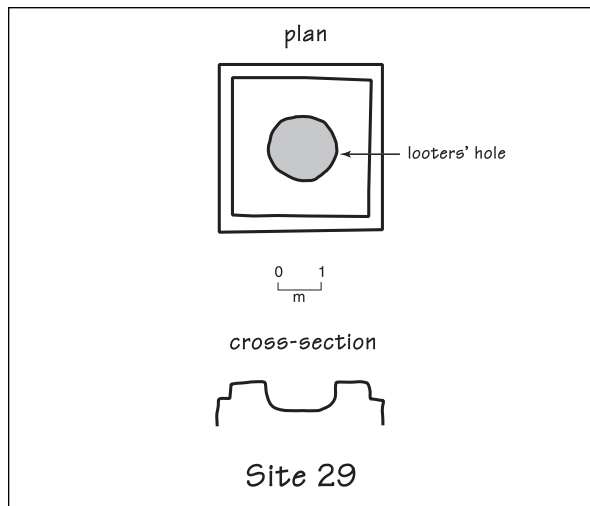
9.2. Site 400. Sketch plan.

fulfilled a civic-ceremonial function in addition to or instead of a mortuary one.

Sector A of Site 299 continued to be used in Nasca 5 times, and this is the phase of main use. Sector B at Site 299 was first used in Nasca 5 times, and Nasca 5 is the dominant phase (though not to the skewed degree observed in Sector A). Sector B is a small, intensively looted area. The remains of the corner of a large structure, more than 6 by 2.20 meters in size, made of cylindrical adobes and plastered over with mud, are visible in a large looters' hole. Tentatively, the structure is identified as a funerary chamber.

Mortuary Architecture at Habitation Sites

Mortuary architecture was observed at Sites 22, 42, 46, 70, and 80, of which Site 22 is newly occupied in Nasca 5 times and is described here. Its remains consist of cylindrical tombs built of fieldstone and rock slabs (fig. 9.5). Average tomb diameter at the site is 80 centimeters; average tomb depth is 90 centimeters. That these are tombs rather than storage facilities is suggested by the presence of human bone and potsherds around the cists.



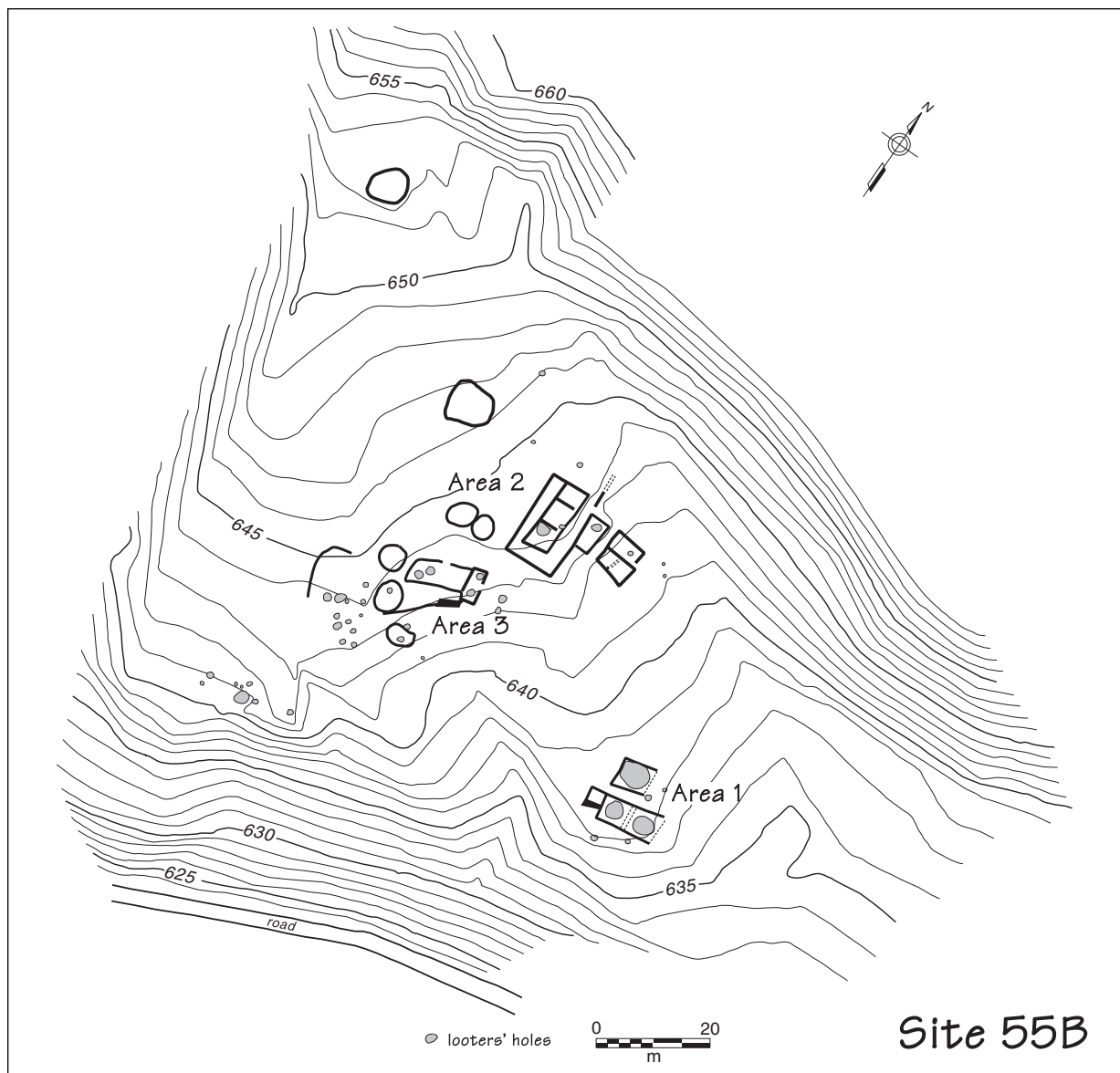
9.3. Site 29. Tomb.

Mortuary Architecture at Civic-Ceremonial Sites

Mortuary architecture was observed at Sites 79 (considered in a separate section later in this chapter), 81 (considered in a separate section later in this chapter), 195 (possible; see chapter 5), 341 (possible; see chapter 5), and 386. At Site 386 a low, natural mound or platform, 21 by 18 meters in area, is surrounded by a fieldstone wall, today rubble. The platform exists because it is located at the north end of a terrace cut by a quebrada and is thus raised above the quebrada. The site is severely looted because of the presence of deep (at least 1.40 meters below the surface), cylindrical tombs with barbacoas, some of which are partially intact. In this looted area there are sections of walls constructed of fieldstones set in mud; at least three courses of masonry are visible. The associated pottery is Nasca 5, 6, 7, 8, MH, and scant LIP. Given the surface ambiguity caused by looting, there are three possible interpretations of Site 386: (1) the tombs are Nasca over which MH people built an architectural unit; (2) this is a Nasca architectural unit into which MH people placed tombs; (3) the Nasca phases and the MH occupation are contemporary and associated, and the site is a cemetery with special mortuary architecture in addition to the shaft tombs. In this analysis, I am tentatively ascribing a cemetery and civic-ceremonial function to the site.

SDM 9.4: Nasca 5 Civic-Ceremonial Sites

There are no Nasca 5 civic-ceremonial sites in the upper valley until Site 119 (which, in Nasca 2 times, was an en-



9.4. Site 55B. Theodolite map.

capsulated civic-ceremonial area for Site 117-118), which is also the only Nasca 5 civic-ceremonial site identified in the upper valley. Similarly, only one small civic-ceremonial site, Site 195, has been identified in the lower valley (see chapter 5). Civic-ceremonial sites exist in the middle valley and middle Grande Valley. Some of these have earlier occupations and were discussed in previous chapters (Sites 80, 182, 198, 341 within the 340 cluster, 372, 376, 396C, 439, 446A, 455F, 462). Sites newly occupied in Nasca 5 are discussed here.

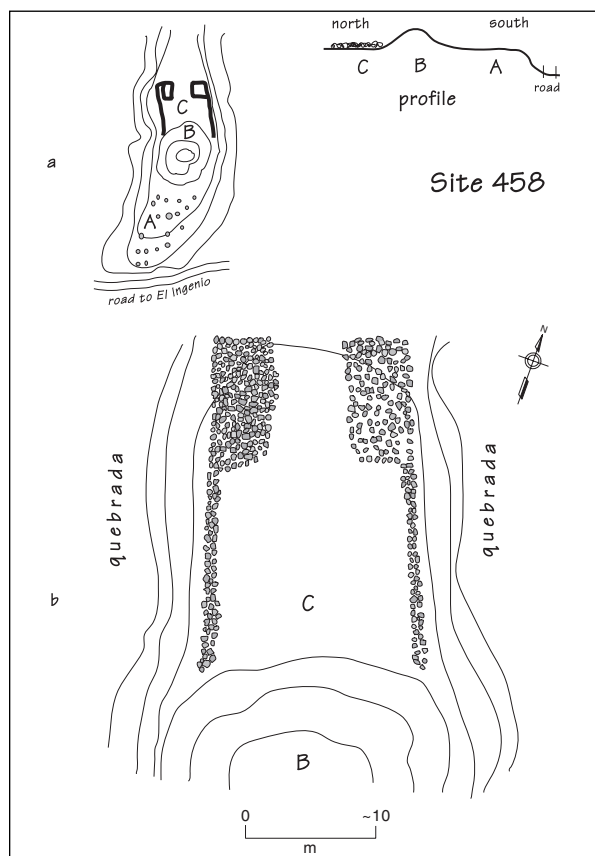
Sites 386 and 458 are located in the middle valley. Site 386 was discussed above in terms of its presumed Nasca 5 burials. The Nasca 5 occupation of Site 458 consists of a

natural promontory interpreted as a huaca and, immediately behind (north of) it, the remains of a square field-stone structure with two small rooms (?) in each corner of its north side, with the area between them constituting an entrance and the hill/huaca forming the south side (fig. 9.6). The possibility exists that the structure is MH in date, overlying an earlier Nasca occupation rather than being contemporary with or later than it.

Site 381, also in the middle valley, has been massively looted because of intrusive LIP tombs. There are odontiform adobe walls, up to 1.65 meters wide; possibly, they are the result of two walls laid side by side. Layers of vegetal fiber fill, almost 1 meter thick, are visible in the loot-



9.5. Site 22. Tomb.



9.6. Site 458. Sketch plan.

ers' holes. The fill suggests that the whole area was artificially leveled and that the walls were erected on a deliberately leveled surface.

Site 296A2

Site 296 is located on the west side of the middle Grande Valley. Sector A2 at Site 296 is a massively looted area of loaf-shaped adobe architecture (fig. 9.7).⁴ A typical loaf-shaped adobe measures 26 by 15.50 by 13.50 centimeters. Architecture consists of square rooms, about 8 meters on a side; walls were at least 70 centimeters wide. The adobes of this architecture were set in mud mortar and laid in even courses; many adobes have been ripped out of context and lie on the site surface. This architecture varies in degree of preservation from one to four courses (achieving a height of 60 centimeters). Traces of white, red, and black pigment are still visible on some walls (fig. 9.8). Some floors had been whitewashed.

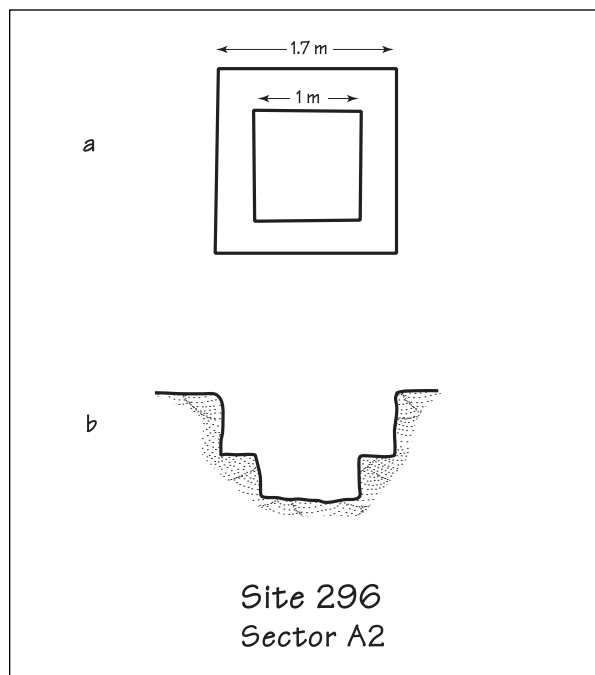
There are burials in this sector. They are not intrusive in the architecture; rather, they were placed in the ground, which varies in composition from light gravel and sand to hard clay (caliche). Some burials were placed in small, deep (1.70 meter depth), cylindrical shafts excavated into hard clay; such a tomb could measure 1.90 by 1.30 meters. Others were placed in rectangular cists; such a tomb



9.7. Site 296A2. Wall of loaf-shaped adobes.



9.8. Site 296A2. Traces of white, red, and black pigment are still visible on some walls, and some floors have been whitewashed.



9.9. Site 296A2. Tomb. A. A bilevel nested square cist.

could measure 1.90 by 1.30 meters. Several tombs were bilevel nested square cists (fig. 9.9) that had a 1.75-meter-deep three-layer barbacoa (the lower cane roof tied with vegetal fiber, the huarango logs, the torta on top).

Site 296A2 is a very important site, but the intensity of disturbance caused by looters has resulted in extreme surface ambiguity. It is possible that the burials antedate the surface architecture, which appears to be in association with the late Nasca and early MH pottery on the site surface. I believe that the site fulfilled a civic-ceremonial function in Nasca 5 and later Nasca times. I also believe that some burials are contemporary with this use of the site and that some are later. Excavation is needed to clarify the situation.

SDM 9.5: Nasca 5 Geoglyphs

The Ingenio–middle Grande geoglyphs have been discussed previously (Silverman 1990b; Silverman and Browne 1991). Bearing in mind the methodological difficulties and cautions I have indicated for dating these remains, a distribution of Nasca 5 geoglyphs can be discerned. As with the geoglyphs dating to previous phases, Nasca 5 geoglyphs begin to appear at the upper end of the middle valley, in this case at Site 346.

Various of the geoglyphs previously in existence appear to continue in use in Nasca 5 times or to be reused

at this time (Sites 80, 165/423, 207,⁵ 210, 215, 222, 225, 242, 287, 305, 311, 321, 330, 346, 360, 378, 426, 446–447–449, 457, 551), whereas others are not (compare SDM 9.5 to SDMs 8.5, 7.5, 6.5, 5.5). Seven geoglyphs appear to be newly traced in Nasca 5 times (Sites 153, 165/417, 219, 243, 251, 315, 320). Although the major geoglyph field at Site 81 appears to have pre-Nasca 5 use, its principal occupation is Nasca 5. The site is discussed separately below because of its important associated cemetery and civic-ceremonial features.

Most Nasca 5 geoglyphs occur as functionally discrete sites (Sites 153, 207, 210, 215, 219, 222, 225, 242, 243, 251, 287, 311, 315, 320, 346, 360, 378, 449, 457, 551). They also occur in association with habitation zones (Sites 80, 165, 330), cemeteries (Sites 80, 81, 305, 330, 447), and civic-ceremonial sites (Sites 80, 81, 321, 446A).

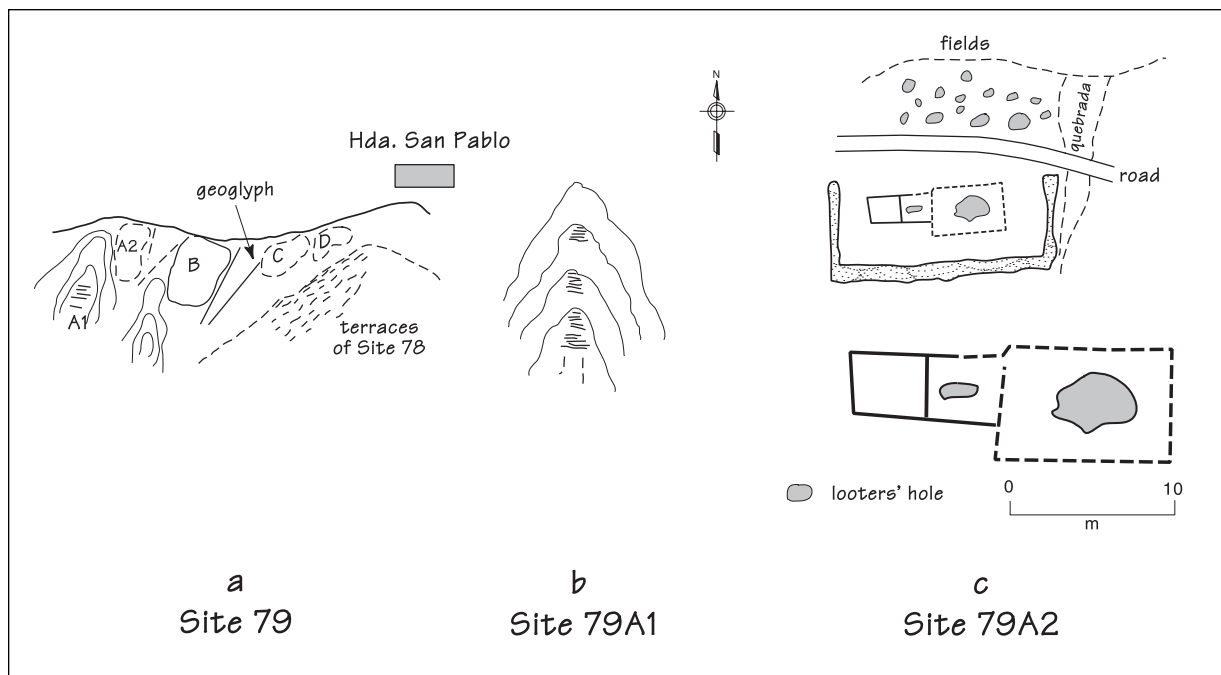
Nasca 5 geoglyphs have a range of forms and configurations: single lines (Sites 165/417, 360), single trapezoids (Sites 165/423, 210, 222B, 251, 311, 320, 321, 551), multiple trapezoids (Sites 219, 225, 243, 330, 346, 378, 426), geoglyph combinations (Site 153, 215), campos barridos (Site 242), and major geoglyph fields (Sites 80, 81, 207, 287, 305, 315, 446–447–449, 457). Refugios were identified at Sites 225 and 311. In addition, Nasca 5 pottery was found on the platform overlooking the Site 82/Bogataya geoglyphs (see chapter 6).

The new Nasca 5 geoglyphs are now discussed. Site 165/417 is a small field of single lines that crisscross each other. Site 219 consists of three trapezoidal geoglyphs. Site 243 consists of long narrow trapezoids and lines that emanate from distinct hills forming a quasi-radial pattern, but they are not a true line center (see, e.g., Aveni 1986, 1990). Site 251 is a badly damaged long trapezoid. Site 315 is a major geoglyph field of straight lines and narrow trapezoids (see Silverman 1990b: fig. 11). Site 320 is a trapezoidal geoglyph.

Site 79

Site 79 (fig. 9.10) occupies a hillside on the south side of the middle valley. The Nasca 5 occupation encompasses what I believe to be a lithic workshop (Sector A1), cemeteries (Sectors A2d, A3, B1, C, D), and civic-ceremonial areas (Sectors A2, B2); a geoglyph may or may not be associated.

A1 occupies a rocky promontory at the extreme west of the site. The upper part of this promontory has been leveled into perhaps three terraces, one above the other. At the back of this terrace there appear to be a few alignments of fieldstone that probably were walls. Fragments



9.10. Site 79. (a) sketch plan of site; (b) sketch plan of Sector A1; (c) sketch plan of Sector A2 with enlarged detail.

of Nasca 5 pottery and abundant flakes of black and reddish brown obsidian litter the surface. The segregated location of this locale and the unusual abundance of debitage suggest that this was a lithic workshop.

A2 is a large cleared rectangular field, interpreted as civic-ceremonial in function. The rock and earth cleared from this surface seem to form a U-shaped ridge on the south, east, and west sides of the cleared field (fig. 9.10c). The south ridge measures approximately 45 meters in length and is 2 meters high. Within the cleared area there is a row of probably three contiguous rectangular field-stone structures. Two of these have been badly looted. The motivation for looting appears to have been the existence of square adobe chambers, 8 meters in diameter, which are identified as tombs. Associated pottery is Nasca 5 and early MH.

North of these is a massively looted cemetery (A3) that also has Nasca 5 and early MH sherds in addition to Nasca 3 and 6. Here burials appear to have been placed in pits excavated in the naturally occurring gravel and rock.

To the east of Sector A there are three distinct areas of massive looting (B, C, D), identified as cemeteries in Nasca 5 times. In an elevated portion of B (Sector B2) there may be platforms; some badly disturbed fieldstone walls also were observed. There is no evidence of Nasca mortuary architecture in these sectors, though a few huarango trunks from barbacoas lie about the surface.

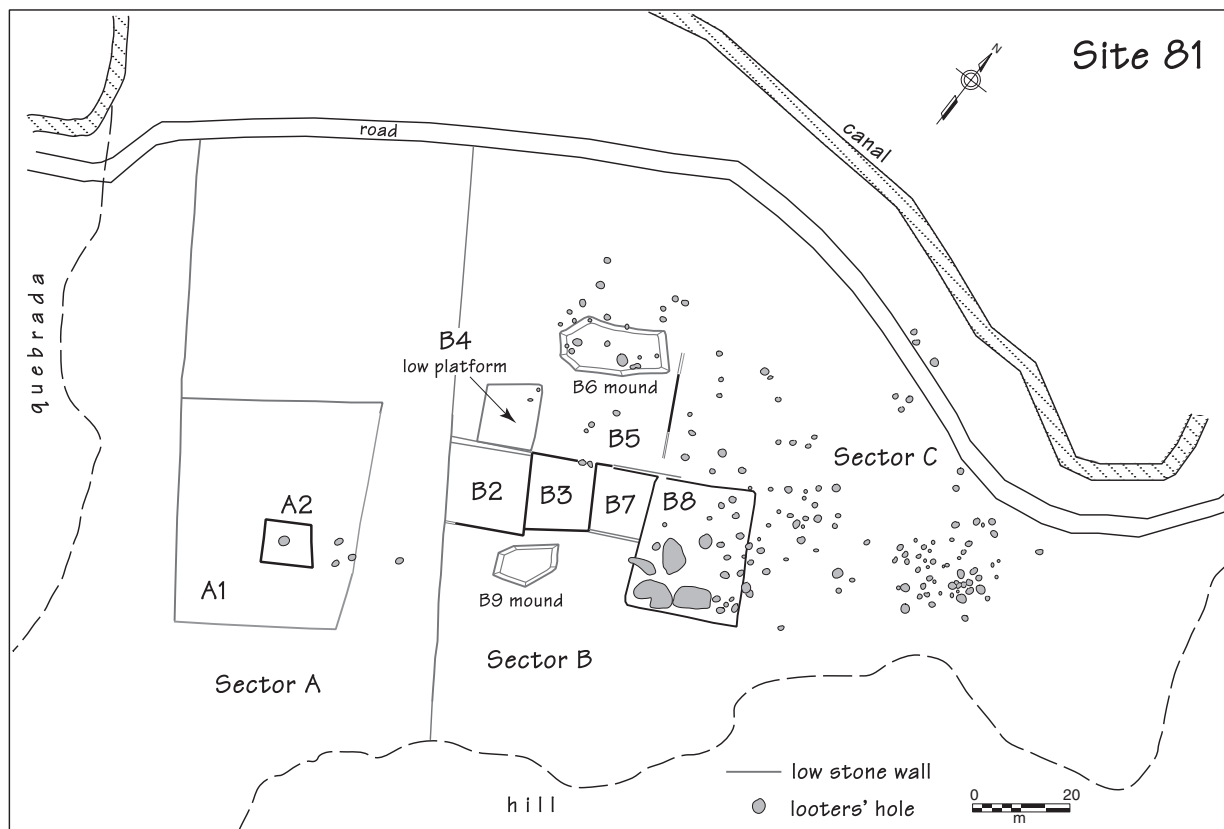
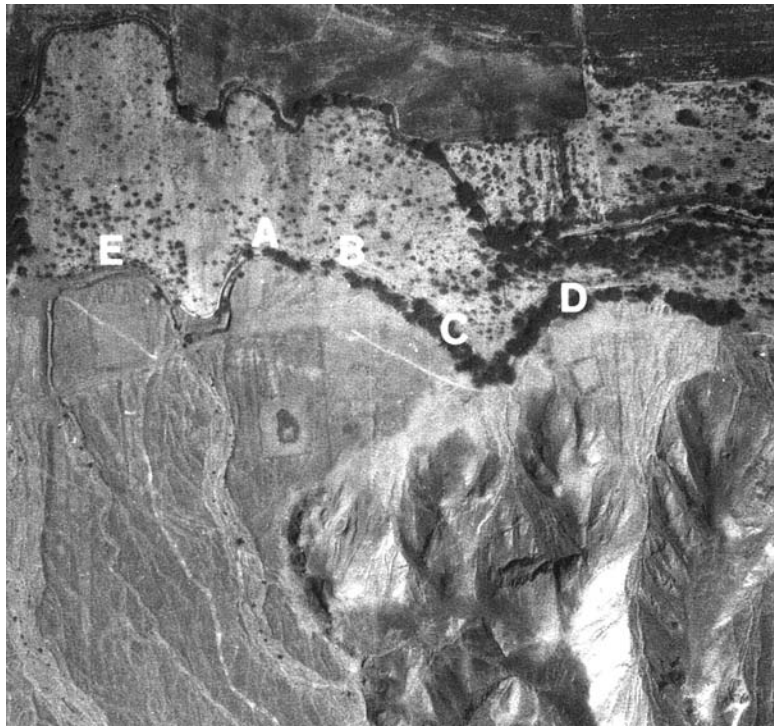
There is an apparent absence of associated habitation

at this site, and there are no nearby contemporary habitation sites. However, domestic remains at Site 79 may be obscured by the intense looting in Sectors B, C, and D. The hypothesized habitation site may extend to the east and lie buried beneath the adjacent LIP Site 78.

Site 81

Site 81 is located on the east side of Quebrada El Fraile. The site appears to be a major geoglyph field that was used for burial and otherwise modified (fig. 9.11), principally in Nasca 5 times, to judge from the surface collections. Geoglyphs are present in Sectors A, B, D, and E; a single major tomb is found in Sector A; a looted cemetery defines Sector C, and it also is possible that looting in Sector C has obscured a habitation zone; rock wall-defined square or rectangular enclosures are present in Sectors A, D, and E.

A1 is a large (approximately 40 by 46 meters) square enclosure delineated by a wall of fieldstones set in mud mortar (fig. 9.12). Presumably, the fieldstones come from the cleared surface of the enclosure. The enclosure is associated with Nasca 5 pottery. In the middle of the A1 enclosure there is a smaller enclosure, A2a, that is a slightly irregular square measuring approximately 10 by 10 meters (fig. 9.12). The surface of this enclosure is clear, and it is delineated by mud-plastered double-faced fieldstone



9.11. Site 81. (above) 1944 SAN aerial photograph 524-55 (and refer to left extreme of fig. 4.7); (below) theodolite map.



9.12. Site 81. In the middle of the A1 enclosure there is a smaller enclosure, A2a, with tomb.

walls, 60 centimeters wide and 40 centimeters high.⁶ Inside this square frame are the remains of a single major tomb, A2b. The tomb was constructed as a 1.80-meter-wide circular shaft of fine fieldstone masonry using small rocks set in mud mortar and plastered over with mud. Three huarango logs of the tomb's original massive barbacoa are still intact at a depth of 70 centimeters beneath the site surface; the original depth of the tomb is unknown because of looting. These huarango logs measure up to 3.80 meters in length and are the largest and heaviest such logs observed in my experience in the drainage. Two Nasca 5 sherds were found in the disturbed dirt of the tomb. Looters apparently removed all items from this tomb.

Geoglyphs (A3) abut the A1 enclosure on its north and south sides, and several run along its west side. A north-running geoglyph that departs from the north wall of A1 abuts a perpendicular geoglyph that itself touches a north-running trapezoid truncated by the agricultural expansion of the valley edge. Of particular interest are a narrow (30 centimeters wide) line and a wider (1.30 meters) line south of the A1 south wall. These lines run north for some 20 meters, disappear when they hit that wall, and then emerge in front of the enclosure (on its

north side). This is clear proof that the tomb complex is superimposed over the geoglyphs. These geoglyphs are associated with Nasca 5 and 6 pottery. The Nasca 5 pottery suggests that the geoglyphs were made only slightly before the superimposed features of the site. The Nasca 6 pottery suggests continued use or, in this situation, effective contemporaneity.

A4 is the hill behind Sector A3's southern geoglyphs. It appears to have been quarried for rock, presumably for use at the site below (in addition to the rock that was cleared from various parts of the site's surface). About halfway up this hill there is a natural platform that has been artificially leveled and contained by a fieldstone wall running east-west across its north face. A Nasca 5 sherd was recovered on its surface. From this platform there is an excellent view of the geoglyphs below, and, indeed, some geoglyphs appear to emanate from this hill, including geoglyphs behind the hill (A5).

There are vague traces of walls in the area between A and B. Nasca 3, 4, and 5 potsherds are present on this surface. Also observed were a worked piece of obsidian and an obsidian point.

Sector B is located east of A. Its features are elaborated over a single, large trapezoidal geoglyph that widens

from south to north (from the hill toward the valley) till destroyed by the expansion of agriculture. A 27-by-20-meter patio (B5) is defined by a mound (B6) on the north, a low platform (B4) with cleared surface on the west, three low-walled platforms or slightly raised patios (B2, B3, B7) with cleared surfaces on the south, and the rock berm of the east side of the geoglyph. All sherds on the surface are Nasca 5 with one possible Nasca 3 sherd. East of these is a larger walled rectangular enclosure (B8). This architecture should postdate the geoglyph in that it is constructed over it.

The B8 enclosure is defined by a low ridge of dirt and small rocks, presumably cleared from its own surface. B8 is massively looted, and looting has brought to the surface bone, broken Nasca 5 pottery, and substantial huarango logs from barbacoes. Thus this sector was a cemetery.

Two Nasca 5 sherds were recovered from a looters' hole in the northeast corner of the B4 platform and date the construction. The looters' holes do not indicate a mortuary function in the absence of diagnostic evidence of burials.

B6 is looted, revealing it to have been made of dirt and rock rubble. Scant bone and scarce potsherds are present on the surface, though there is no evidence of tomb architecture. Nasca 4 and Nasca 5 sherds were recovered pertaining to two and four vessels each.

B5 is lower than the features that surround it to the north, west, and south. It is somewhat looted, but only the scantest amount of bone is visible on the surface, and there is no evidence of tomb architecture. Two tiny fragments of shell were noted. One Nasca 5 sherd and an unphaseable Nasca sherd were recovered.

B9 is a small mound composed of dirt and rock rubble that is located immediately south of rooms B2 and B3. Looters made two holes on the mound, but there is no evidence of tombs. The associated pottery is Nasca 5.

Sector B1 corresponds to all other space in this sector. Nasca 5 and, possibly, Nasca 4 sherds were recovered on this surface.

Sector C is located east of Sector B. Its surface is covered with large and small looters' holes and a light scatter of bone and potsherds. One 60-centimeter-wide, circular, fieldstone-lined cist with a stone slab cover was observed. A forked huarango post was observed on the surface; it could correspond to a barbaoca. Maize remains also are present on the site surface. Pottery includes plainware as well as Nasca 5 potsherds. The observed pattern of remains suggests the possibility of a habitation area that was subsequently used for burials, thereby provoking the massive looting of the sector, or

this area was looted as looters continued eastward from their successful depredation of Sector B8.

Sector D (originally recorded as Site 350) is the extreme east side of Site 81. It consists of a single rock-outlined, cleared square enclosure located on the west side of a long trapezoidal geoglyph. The enclosure measures 24 by 23 by 19 by 24.50 meters. Nasca 5 and, possibly, Nasca 4 pottery was present on its surface.

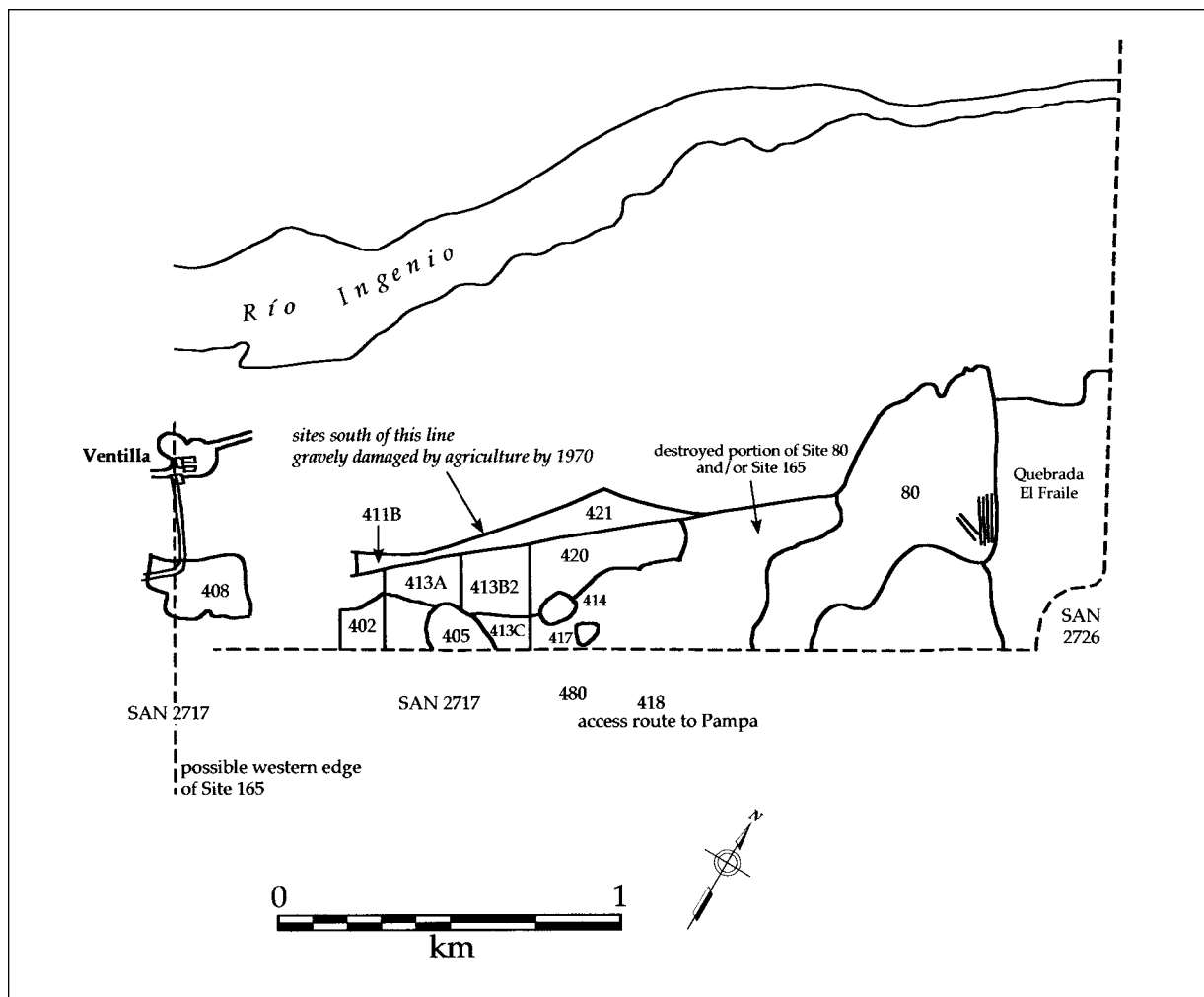
Sector E is on the extreme west side of Site 81. It consists of a cleared rock-outlined square enclosure, measuring 24 by 22 meters, almost at the edge of today's cultivation and a series of attached and proximal geoglyphs to the south. No cultural remains were noted on the surface of this sector.

Site 81 bears marked similarity to Site 305, specifically, in the narrow lines that abut cleared squares and rectangles and the perpendicular direction of some trapezoids across (and hence subsequent to) other features. Also at both sites various geoglyphs appear to emanate from hills. In the case of Site 81 one particular hill appears to be the focus of a line center as these have been defined by Aveni (1986, 1990). The surface material at Site 81 is almost exclusively Nasca 5 in date, including the sherds that can be reasonably associated with Site 81's mortuary aspect. It is tempting to attribute the earlier Nasca material at Site 81 to the geoglyphs, although some may have been elaborated in Nasca 5 and Nasca 6 times, as indicated by fragments of a single broken woman's face vessel (the motif begins in Nasca 5) on the east side of the rock berm of the narrow line departing south from the southwest corner of the A1 enclosure (on the other hand, this could indicate reuse or continuing maintenance of the geoglyphs).

It is possible that huaicos within Quebrada El Fraile destroyed remains that might have joined Sites 80 and 81 as a single site. A narrow straight line appears to have originally crossed the quebrada between the Sector A4 hill of Site 81 and the east side of Site 80. This narrow line crossed over the south end of a large trapezoid, 2 meters wide at its base, that still exists in the middle of Quebrada El Fraile. The presence of geoglyphs at Site 80 itself further supports the argument that there was once a huge geoglyph field encompassing both sites.

Intrasite and Intersite Differentiation

The Nasca 5 landscape manifests a dramatic recovery from the preceding Nasca 4 phase. Nasca 5 settlement patterns were complex, and sites were numerous. In addition to habitation sites of varying size and configura-



9.13. Site 165. The sectors of the site occupied in Nasca 5 times.

tion, there were cemeteries, civic-ceremonial sites, and geoglyphs. I have presented the evidence for a lithic workshop at Site 79.

Nasca 5 habitation sites vary by size, but size does not necessarily correlate with internal site differentiation. Most Nasca 5 habitation sites are undifferentiated and, in my opinion, equivalent or redundant: large or small, they consist of uniform remains such as terraces. Although some small habitation sites have encapsulated ceremonial areas (e.g., Sites 75, 340, 341, 373, 400), this intrasite differentiation does not appear to indicate greater primacy of these sites in the valley's settlement pattern.

Site 165, however, is of another category. It may have reached its apogee in Nasca 5 times in terms of size and complexity (fig. 9.13). It encompassed habitation areas of ordinary fieldstone terraces (402, 405, 408, 413C), habitation terraces within a walled enclosure (413A), cemeteries (411B), civic-ceremonial areas, geoglyphs (417), and an access route to the Pampa (418). The civic-ceremonial

areas consist of mounds (413B2, 421); patios, platforms, and mounds within a walled enclosure (420); and a rectangular fieldstone structure (480). Other areas of the site were occupied, but their function could not be determined from the surface evidence (414). Interestingly, there is virtually no evidence of mortuary differentiation at Site 165 in this or other Nasca phases. Indeed, burials here are among the simplest recorded on survey: unprepared pits in 411B. Sites 165 and 80 may have been a single site in Nasca 5 times (see fig. 4.7).

The difficulty of functionally categorizing Site 552 was considered in chapter 5. To reiterate, domestic remains at Site 552 occur within the context of a walled enclosure and, therefore, are significantly different from the usual Nasca pattern of unrestricted hillside habitation fieldstone terracing. The site may be considered elite habitation or civic-ceremonial or both. Only excavation can provide a more definitive functional interpretation of the site.

Sites 80 and 296 were important Nasca 5 civic-ceremonial sites. Smaller civic-ceremonial sites or encapsulated civic-ceremonial loci also existed at this time (e.g., Sites 119, 195, 198, 341, 372, 376, 381, 386, 396C, 439, 446A, 455F, 458, 462).

Differentiation within and among Nasca 5 cemeteries overall transcends the presence or absence of mortuary architecture that has been discussed in previous chapters. In Nasca 5 times we are dealing with an additional new configuration in which single tombs may be large and/or complex in their architecture and/or specially sited. The prime and most unambiguous example of the new mortuary complexity is found at Site 81, a lesser version of which may be present at Site 79.

Notes

1. At Site 172 a domestic occupation of an unknown nature or uncertain configuration was recognized buried below an LIP site.

2. Although a few Nasca 5 sherds were recovered at Site 220, these are a minuscule portion of the overwhelmingly Nasca 1 and LIP occupation of the site. Furthermore, the Nasca 5 sherds were recovered in Sector R, which is a sector of destroyed LIP habitation. The association of the Nasca 5 sherds is unknown.

3. There may be a Nasca 5 habitation locus of perishable architecture at Site 503, where traces of upright canes were observed in a small looters' hole (and recall the surface evidence of Site 505's cane walls in Nasca 1 and 3 times as well as in Nasca 5). But if there is a Nasca 5 habitation site at Site 503, it is buried under a severely looted LIP domestic and mortuary occupation.

4. Sector A1 is clearly MH in date with intrusive LIP burials. Sector B also dates to the MH.

5. Site 207 (Silverman 1990b: fig. 17) is a massive LIP geoglyph field, but enough Nasca sherds exist on the geoglyphs to suggest earlier use.

6. I hypothesize that the large accumulation of rocks along the outside of this enclosure's north walls could come from a pile of rocks that originally were placed on top of the sealed tomb to mark it.

Nasca 6 Settlement Patterns in the Ingenio and Middle Grande Valleys

Nasca 6 pottery was found on the surface of seventy-one sites during survey (SDM 10.1). Nasca 6 is a distinctive ceramic phase characterized by the fully developed prolific style as well as complex late representational iconography in which there was preference for militaristic themes (see Roark 1965). There are many vessel shapes, among which elegant tall vases are particularly notable. Bright white backgrounds contrast to the creamier hue of white slip in previous phases.

Sites with Nasca 6 pottery and Nasca 6 sites occur from 900 meters in altitude in the upper valley down to the lower end of the survey area. These sites are identified as habitation sites, cemeteries, civic-ceremonial sites, geoglyphs, and sites whose function in Nasca 6 times is unknown (CD: spreadsheet 10.1). The different site functions sometimes co-occur as with associated habitation and cemetery areas, civic-ceremonial and cemetery areas, and civic-ceremonial areas with geoglyphs.

SDM 10.2: The Setting, Location, and Spacing of Nasca 6 Habitation Sites

Upper Valley

The distribution of habitation sites in the upper valley clearly does not make full use of the ethnographically known pukios because there are so few Nasca 6 habitation sites. Looking downvalley, Nasca 6 habitation begins at Site 30 and continues at increasing distances between sites to Sites 40, 46, 68 (newly occupied in this phase), and 343. All identified upper valley Nasca 6 habitation sites are on the south side of the valley. I have no explanation for this preference given the previous distribution of habitation sites on both sides of the valley, though in Nasca 5 times this preference for the south bank appears to have been emerging (compare Section 2 of SDMs 9.2 and 10.2). Cemeteries exhibit the same south side preference; only Site 55 is located on the north bank (see Section 2 of SDM 10.3).

Middle Valley

This same preference for the south bank continues in the middle valley; only one Nasca 6 habitation site is located on the north side (see Section 3 of SDM 10.2). Inasmuch as no Nasca 6 cemeteries were identified on the north bank of the valley, it appears that the preference we see today reflects ancient decisions.

Given the wide spacing of Nasca 6 habitation sites, it seems reasonable to expect that either Site 347 or Site 330 and either Site 172 or Site 176 should be eliminated or somehow collapsed so as to maintain the apparently aboriginal pattern. However, on the basis of the surface evidence I can find no unambiguously compelling reason for doing so other than to note that my certainty about the existence of habitation at Sites 330 and 347 in Nasca 6 times is only at the level of “possible” because of looter-caused disturbance at the former and the predominance of Early Horizon pottery at the latter with the possibility that Nasca pottery is washing down from a nearby geoglyph. I am similarly uncertain about the validity of the Nasca 6 occupation at Site 172, where a Nasca 1 habitation site is buried beneath an LIP occupation with but a trace of later Nasca phases. But Site 176 is clearly a Nasca 6 habitation site with an antecedent Nasca 5 occupation. The scarcity of Nasca 6 habitation sites reveals and permits me to highlight the interpretive problems that exist on site surfaces and that must be acknowledged in presenting survey data.

Lower Valley

No Nasca 6 habitation sites were identified in the lower valley. Given the paucity of Nasca 6 cemeteries in the lower valley (see Section 4 of SDM 10.3), the dearth of habitation may reflect ancient reality.

Middle Grande

No Nasca 6 habitation sites were identified in the middle Grande (see Section 5 of SDM 10.2), although several cemeteries were identified (see Section 5 of SDM 10.3). This suggests that habitation remains have been lost.

Kinds of Nasca 6 Habitation Sites

Nasca 6 habitation sites have differing configurations. There are terraced hillsides with structures (Sites 40, 46, 68, 347) and without structures (Sites 30, 408 [within what was formerly 165], 176, 330, 343, 388, 425). Where

structures are present, they may be circular, square, or rectangular; differently shaped structures may occur at the same site. Patios were recognized at some sites, and storage facilities are present on the terraces of these sites (Sites 46, 176).

Sector A of Site 388 is newly occupied in Nasca 6 times and consists of some ten levels of fieldstone terraces descending the west side of a hill. On any one level there can be one to three cleared areas, measuring 7 by 5 meters; these are interpreted as living surfaces.

Site 68, newly occupied in Nasca 6 times and a single occupation site, consists of a large semicircular terrace on which three or four circular fieldstone structures, presumably houses, are present.

SDM 10.3: Nasca 6 Cemeteries

I have previously indicated the difficulty of dating looted mortuary contexts at multicomponent sites (see chapter 5). Most Nasca 6 people appear to have been buried in sites that functioned only as cemeteries (Sites 55, 75, 79, 101, 144, 157, 173, 192, 226, 227, 280, 299, 326, 341, 359, 361, 383B, 440, 496, 505). At Sites 296 and 386 (chapter 9) burials are present at a civic-ceremonial site. At Site 330 a cemetery is located within a habitation zone in association with geoglyphs. Burials also are found at the Site 30 habitation site within the domestic area and in a discrete cemetery area. Burials also are present at the Site 46 habitation site (see chapter 7). Of all the cemetery sites listed above, only Site 496 is newly established in Nasca 6 times. Site 496 is a massively looted multicomponent cemetery without mortuary architecture. Sherds, bone, some loaf-shaped adobes, plainweave cotton cloth, fiber rope, canes, and small cotton accumulations are scattered on the surface. At Sites 227 and 505 Nasca 6 pottery is restricted to specific sectors (A at 227, B at 505), and in these sectors Nasca 6 is the earliest pottery present.

Most burials were recognized as looters' holes, and most looters' holes indicated burial in shallow, unprepared pits (Sites 30, 75, 79, 173, 192, 226, 280, 326, 330, 359, 361, 383B, 440, 496, 505B). However, some individuals at some sites (Sites 46, 101, 144, 157, 227M, 296, 341, 386) received more elaborate mortuary treatment, as discussed in previous chapters.

SDM 10.4: Nasca 6 Civic-Ceremonial Sites

There are no Nasca 6 civic-ceremonial sites in the upper valley or lower valley. In the middle valley there is a

minor Nasca 6 occupation at Site 80 (see chapter 5; fig. 5.21) that appears to consist of geoglyphs (see below) and the artificially modified north face of the Sector D1 hill. As indicated in the previous chapter, there is a minimal presence of Nasca 6 pottery at Site 81. Similarly, the main occupation of tiny Site 386, also in the middle valley, appears to be Nasca 5 (see chapter 9). In the middle Grande the small, planned architectural unit at Site 313 continues in use, and the tripartite trapezoidal structure at Site 321 also may have been functioning. Site 296 continues to be occupied, but, as discussed in chapter 9, its interpretation is complicated by extreme looting-caused surface disturbance.

SDM 10.5: Nasca 6 Geoglyphs

Ingenio and middle Grande geoglyphs have been discussed previously (Silverman 1990b; Silverman and Browne 1991). Nasca 6 geoglyphs appear to begin at Site 330 in the middle valley (see Silverman 1990b: fig. 16). Various of the geoglyphs used earlier appear to continue in use in Nasca 6 times or to be reused at this time (Sites 80, 207, 219, 222B, 242, 251, 321, 330, 426, 444, 446, 449). Possibly, two geoglyphs are newly traced in Nasca 6 times: Site 387 (a small, 70-meter-long trapezoid) and Site 222D (a single long trapezoid). At this time Site 438 would consist only of Sector D, an unlooted cleared area that lacks the definite, outlined form of a true campo barrido; it is included in this section with the caution indicated.

Nasca 6 geoglyphs occur most commonly as discrete sites (Sites 207,¹ 219, 222, 242, 251, 256, 387, 426, 438, 444, 446B–C, 449). Only at Site 330 are geoglyphs in apparent association with cemetery and habitation zones. At Site 80 geoglyphs clearly occur in the context of a civic-ceremonial center. The association of a single trapezoid with a possible civic-ceremonial structure at Site 321 has been discussed in chapter 6. No refugios were identified.

Nasca 6 geoglyphs have a range of forms and configurations: single trapezoids (Sites 251, 321, 387), multiple trapezoids (Sites 219, 222, 330, 426, 444, 446B–C), cam-

pos barridos (Sites 242, 256, 438), and major geoglyph fields (Sites 80, 449). In the case of Site 256, the cleared area is delimited on the south side by a rock wall (the rock was cleared from the surface). There is an interpretive problem with Site 256: either the cleared field was made by Nasca 6 people with Nasca 8/Loro and MH people (evidenced by surface pottery) later placing their tombs intrusively here, or the later people cleared the area for burial and the Nasca 6 site function is unknown, unless it is contemporary with the burials.

Changes

The most important aspect of the Nasca 6 settlement pattern is the disappearance of Site 165 as a great habitation site with encapsulated civic-ceremonial functions; only former Sector 408 appears to be occupied at this time.² The dramatic change at Site 165 is paralleled at the adjacent Site 80, where the Nasca 6 presence at the former civic-ceremonial center is minor and restricted to geoglyphs and the artificially modified north face of the Sector D1 hill. The small Site 386 mound continues in use, though possibly reduced from Nasca 5, if, indeed, the surface sherds do not pertain just to the looted tombs (see chapter 9). In the middle Grande, occupation of the important but enigmatic Site 296 continues, as does use of the small, planned architectural unit at Site 313, though here perhaps with a decline from the previous Nasca 5 occupation. In the survey area few habitation sites have been identified and there appears to be no Nasca 6 habitation site of notable size or complexity. Rather than intrasite and intersite differentiation, we appear to be witness to the collapse of the preceding florescent Nasca 5 settlement pattern.

Notes

1. Site 207 (Silverman 1990b: fig. 17) is a massive LIP geoglyph field, but enough Nasca sherds exist on the geoglyphs to suggest earlier use.
2. The nature of Site 414, where one Nasca 6 sherd was found, is unknown.

Nasca 7 Settlement Patterns in the Ingenio and Middle Grande Valleys

Nasca 7 pottery was identified on the surface of forty-nine sites in the survey area (SDM 11.1). It is difficult to identify Nasca 7 in the field because Nasca 7 is a poorly published phase. Furthermore, it can be difficult to distinguish Nasca 6 from Nasca 7 (compare the Nasca 6 and Nasca 7 pots illustrated in Silverman 1993a: fig. 3.6) on the basis of sherds recovered in the field because through the serendipity of breakage, minute differences in the manner of depiction of proliferous imagery that distinguishes the two phases may not be represented on particular sherds. Other aspects of Nasca 7 are innovative, however, and, if present on sherds, permit correct chronological attribution.

Sites with Nasca 7 pottery and Nasca 7 sites occur at least as high upvalley as 1,150 meters above sea level and continue downvalley almost to the limit of the survey area. These sites are identified as habitation sites, cemeteries, civic-ceremonial sites, geoglyphs, and sites whose function in Nasca 7 times is unknown (CD: spreadsheet 11.1).¹ The different site functions sometimes co-occur as with associated habitation and cemetery areas or civic-ceremonial areas associated with cemeteries.

SDM 11.2: The Setting, Location, and Spacing of Nasca 7 Habitation Sites

The distribution of habitation sites in the upper valley shows that Nasca 7 people did not make full use of the ethnographically known pukios because there are so few Nasca 7 habitation sites. Looking downvalley, Nasca 7 habitation began at Site 9 and was widely separated from the next habitation site on which Nasca 7 pottery was found, Site 30. The proximity of Sites 41 and 42 is puzzling given the vast tracts of arable land that appear to be unoccupied in Nasca 7 times. The interpretive problem with Sites 41 and 42—as with so many sites recorded on survey—is surely created by scant amount of diagnostic pottery on the site surfaces. It is tempting to suggest that there was a small domestic occupation at Site 41 and that these Nasca 7 people were buried in the (now looted) tombs in Sector A at Site 42, but I have no firm evidence for making this argument. If the surface collection from Site 46 is an accurate representation of site history, this site has a continuous occupation between Nasca 3 and 7 times, with its apogee being Nasca 5.

Nasca 7 population in the middle valley appears very scarce, with evidence having been found only at Site 347 and Site 413C (within what was formerly Site 165). No Nasca 7 habitation sites were identified in the lower valley. Only one site in the middle Grande, Site 287, appears to have been habitational in Nasca 7 times.

If I am correct in this reconstruction of the surface evidence for habitation in Nasca 7, there is once again a clear preference (to the point of exclusive preference) for residing on the south side of the Ingenio Valley. Preference for the south side of the valley is also evident in the location of cemeteries. The significantly greater number of cemeteries than habitation sites suggests strongly that some Nasca 7 habitation sites have been destroyed or lost, presumably those that were located in the valley bottom in the middle and lower Ingenio Valley and in the middle Grande.

Kinds of Nasca 7 Habitation Sites

Nasca 7 habitation sites have differing configurations. Because most of the sites are in the upper valley, the majority are terraced hillsides with fieldstone contention walls (Sites 9, 30, 41, 46); cobble construction is present at Site 347. Some of these sites (Sites 9, 46, 347) have structures, presumably habitational. Site 42 was located in a huaico, where the natural disposition of boulders created the basic distribution of structures. Storage pits were recognized at Sites 9 and 30 and patios at Sites 30 and 46. Site 413C consists of large, cleared terraces that descend a quebrada. In Sector A of Site 287 perishable architecture (low walls made of canes tied to huarango posts) was observed in looters' holes, and this architecture is considered indicative of a habitation locus. All these sites have been described in previous chapters; therefore, further detail is not provided here.

SDM 11.3: Nasca 7 Cemeteries

In the discussion of Nasca 1 burial patterns I indicated the difficulty of dating looted mortuary contexts at multicomponent sites. Nasca 7 people appear to have been buried in discrete cemeteries (Sites 55, 99, 101, 119, 144, 157, 227,² 273, 280, 299B, 303, 359, 370, 410, 448, 478, 496, 526), at civic-ceremonial sites and/or sites with geoglyphs (Sites 269,³ 296, 305, 386), at habitation sites (Sites 9, 30, 42, 46), and at a site (Site 287) with combined habitation-cemetery-geoglyph functions in Nasca 7 times. At the four Nasca 7 habitation sites burials were placed in

the spatially discrete cemetery areas rather than in abandoned habitation structures. Most burials were recognized as looters' holes, and most looters' holes indicated burial in shallow, unprepared pits. However, some individuals could have received more elaborate mortuary treatment (at Sites 30, 42, 46, 101, 144, 157, 299B); these sites have been discussed in previous chapters, and the information will not be repeated here. At Site 227D I recorded a rectangular tomb constructed of fieldstones set in mud; the tomb measured 1.90 by 1.50 meters.

SDM 11.4: Nasca 7 Civic-Ceremonial Sites

Sites 296, 313, and 386 have been discussed in previous chapters. The information about them will not be reconsidered here.

SDM 11.5: Nasca 7 Geoglyphs

There are five geoglyph sites with Nasca 7 potsherds on their surfaces. All of these geoglyphs appear to have been used in earlier times (see previous chapters). Four of the five geoglyph sites did not have other functions (Sites 215, 222, 321, 551). Sites 321 and 551 are single trapezoids. Sites 215 and 222 are multiple trapezoids. The Nasca 7 occupation at Site 287 (a major geoglyph field with habitation and cemetery areas) was restricted to campos barrios. No Nasca 7 refugios were identified.

Comment

The Nasca 7 settlement pattern in the survey area is so limited that there is no evidence of intrasite and intersite differentiation beyond the noted differences in burials.

Notes

1. In the years since I wrote *Cahuachi in the Ancient World* (see Silverman 1993a: fig. 23.9), continued analysis of the Ingenio Valley survey data has convinced me that there probably are a few Nasca 7 habitation sites. These are reported in this chapter.

2. I also wish to note that we observed an early Nasca vessel (see Silverman 1993a: figs. 16.25, 16.30l for a comparable example) at Site 227D that a local informant identified as an infant's burial urn. All decorated pottery in the sector appears to be Nasca 7 and late MH in date.

3. See the cautionary statement about Site 269 in note 4 in chapter 7.

Nasca 8/Loro Settlement Patterns in the Ingenio and Middle Grande Valleys

Nasca 8/Loro pottery is highly diagnostic (Silverman 1988b, 1993a: chap. 13; Strong 1957) and was recognized at fifteen sites (CD: spreadsheet 12.1, SDM 12.1). Nasca 8/Loro pottery occurred on survey between 800 meters above sea level in the upper valley to 180 meters above sea level in the Middle Grande. None of the Nasca 8/Loro sites was a habitation site or geoglyph (CD: SDMs 12.2, 12.5). Ten sites were or appeared to be cemeteries (Sites 43, 55, 144, 152, 229, 256, 269, 361, 376, 386; CD: SDM 12.3). All were previously occupied except Site 229, which was a small, intensively looted cemetery whose earliest occupation appeared to be Nasca 8/Loro. At Site 229 there were several circular cists with carefully smoothed mud

sidewalls and barbacoas. Interestingly, a skull with bilobal cranial deformation, rather than the typical Nasca frontal-occipital kind, was observed. Whether or not this has general significance for Nasca 8/Loro people remains to be determined with a large and systematic skeletal sample. Nasca 8/Loro was also present at a civic-ceremonial site, Site 296 (see discussion in chapter 9; CD: SDM 12.4). The function of the other four sites (Sites 80, 297, 323, 395) in Nasca 8 times is unknown and, therefore, cannot be further considered. Thus the decline in settlement pattern in the survey area that began in Nasca 6 and intensified in Nasca 7 reached its nadir in Nasca 8/Loro times.

Nasca Settlement Patterns in the Other Valleys of the Río Grande de Nazca Drainage

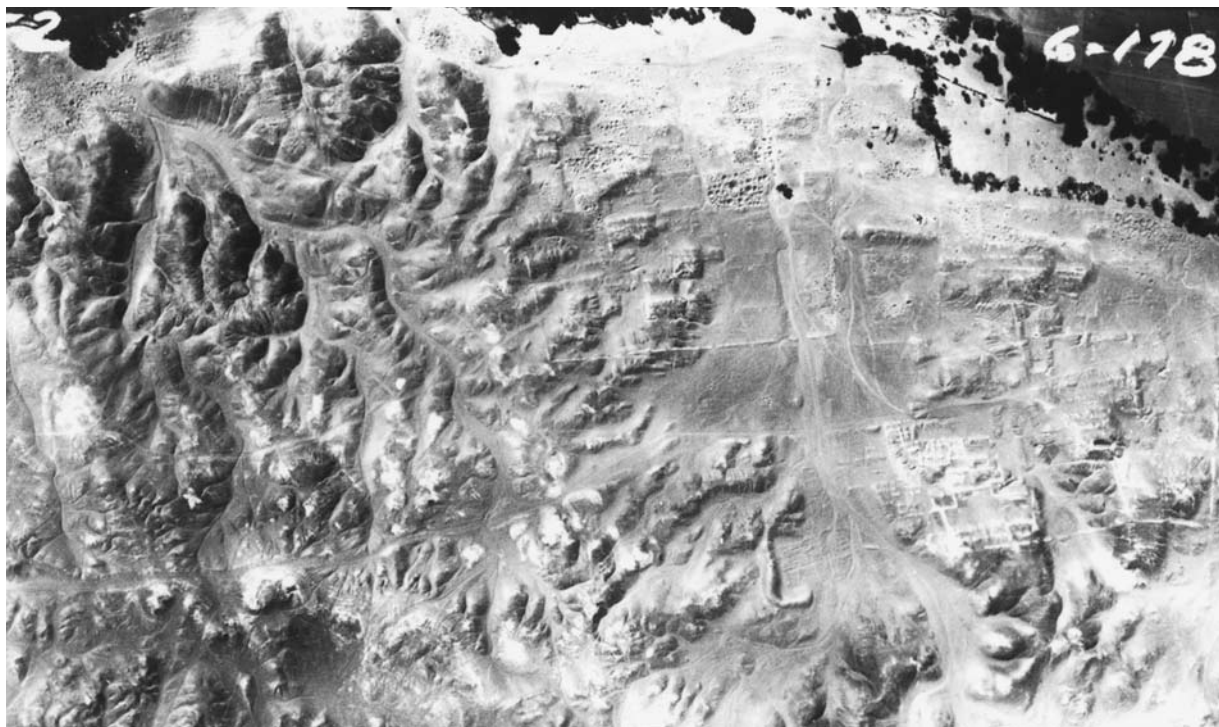
Knowledge of Nasca sites in the other valleys of the Río Grande de Nazca drainage varies by degree of investigation and publication. Cahuachi, clearly the most important Nasca site, is also the most intensively studied (e.g., Orefici 1993; Silverman 1993a; Strong 1957 *inter alia*). Preliminary data on Nasca sites in Palpa are available from David Browne's survey (1992; Browne and Baraybar 1988) and the new project by Markus Reindel and Johny Isla (1999). The distribution and nature of geoglyphs in Ingenio and Palpa have been reported by Silverman (1990b; Silverman and Browne 1991), Browne (1992; Browne and Baraybar 1988; Silverman and Browne 1991), and Reindel and Isla (1999). Katharina Schreiber (1989, 1998, 1999; Schreiber and Lancho Rojas 1995) has made brief remarks about Nasca sites in the southern tributaries of the drainage. Heinrich Ubbelohde-Doering's data for Santa Cruz, largely concerning cemeteries, have been presented by Neudecker (1979). Other data on Nasca cemeteries have been published by Kroeber and Collier (1998), Robinson (1957), Silverman (1993a: chap. 14), and Tello (1917; Tello and Mejía Xesspe 1967: 145–147). A few domestic settlements have been excavated (Isla 1992; Isla, Ruales, and Mendiola 1984; Vaughn 1999). Huaca del Loro,

the Nasca 8/Loro type site, was excavated and briefly reported by Strong (1957) with supplemental information provided by Paulsen (1983). Permanent Nasca littoral sites do not appear to exist (Carmichael 1991).

Cahuachi

Cahuachi (fig. 13.1) is the preeminent Nasca site. Although other Nasca sites with civic-ceremonial constructions have been discovered, none of these can compare to Cahuachi.

Cahuachi extends for some 2 kilometers along the south bank of the Nazca River in a narrow section of the valley at approximately 365 meters above sea level. The site sits on a series of brown, barren river terraces just above the valley floor and beneath the Pampa de Atarco. Millennia of wind erosion have flattened the tops of the hills and eroded their sedimentary strata, thereby giving the hills a naturally truncated, pyramidal appearance. These hills form the core of the majority of artificial constructions at the site (see Silverman 1993a: figs. 5.2, 5.4, 5.5, 5.6, 5.8, 5.9, 5.10, 5.13, 5.19, 5.20, 5.24, 5.26, 5.27, 5.30,



13.1. William Duncan Strong's 1952 aerial photograph of the central zone of Cahuachi.

5.31). Approximately forty mounds of varying size and form occupy only some 25 hectares of the estimated 150 hectares of the site.

The seemingly unconstructed open space between Cahuachi's mounds is carefully constructed. Cahuachi is formed by a pervasive and repetitive pattern of modified natural hills (the semi-artificial mounds) in direct association with naturally and artificially bounded open spaces (three-sided and four-sided enclosures, or *kanchas*) that extend over the site in what I have called the mound-*kacha* pattern (Silverman 1993a: chap. 6). The Unit 4 and Unit 16 walls define the two major areas of space in the central zone of the site. In the case of the former, the space is filled with buildings; in the latter, it is a large plaza. Unit B extends south along the east side of the large Unit A mound and appears to connect it to Unit K.

In addition to the mounds, *kanchas*, and walls, there is unbounded empty space at Cahuachi such as the space between Units 16, 3, and 2 (see Silverman 1993a: chap. 5, figs. 2.3–2.6, 5.2). Because of the ancient Nasca decision to elaborate the site over the natural topography, this natural space also must be considered part of Cahuachi's spatial organization, an integral and important element of the site.

Cahuachi did not have a restricted access. The site is readily approached from the north by crossing the Pampa,

perhaps via the Camino de Leguía,¹ descending to the Nazca Valley below and ascending the gentle slope of the river terrace on which the site is elaborated. Cahuachi is also readily entered from the east and west: no walls, moats, or structures impede access. One can easily descend to the site from the south, crossing the Pampa de Atarco and coming upon the back of the hills, whose front (north) sides were artificially modified to create the truncated mounds of the site's core. Or one could follow the Camino de Leguía northward from the southernmost tributaries so as to arrive at the site precisely where water was available.

My excavations (Silverman 1993a) at the site found little evidence in support of Strong's identification of house mounds at Cahuachi or Rowe's assessment of the site as urban (see Silverman 1988a, 1993a *inter alia*). The deposits identified by Strong and accepted by others as stratified midden appear to be construction fills used for creating volumetric, nonresidential, ceremonial mounds. Although Strong discovered a Nasca 1 habitation locus underlying the mound where he excavated his Cut 3 and a probable Nasca 2 textile-working district where he excavated his Cut 5, Cahuachi was not a domestic site (as this is commonly understood) at the time of its Nasca 3 apogee. Based on the material evidence revealed by survey and excavation at the site and the comparison of these patterns with the remains generated during a mod-

ern Catholic pilgrimage at a sanctuary in Ica, I have argued that during its Nasca 3 apogee Cahuachi functioned as an empty ceremonial center brought to life repetitively and frequently through pilgrimage (Silverman 1988a, 1990a, 1993a: 312–316, 1994b). I have proposed that the large ground-level plazas were places of congregation for pilgrims visiting the site. I have suggested that Cahuachi's mounds were built and modified during pilgrimage episodes by the different social groups constituting the Nasca nation. The ritual objects and domestic materials (such as ceramic plugs, possible spindle whorls and other textile-related implements, plain gourds, plainweave textiles, miscellaneous threads and cords, plant and malachological remains, and so on) within the construction fills could have been generated during frequent pilgrimage episodes and festive occasions at the site, during which time they were swept up to be included in the fills as well as being deliberately placed. I have interpreted the lack of standardization in the mounds at Cahuachi as evidence that these were built by discrete social groups, such as *ayllus*, in accordance with the amount of labor available to them (see Silverman 1990a, 1993a: 309–312). I have argued that particular mounds were the locus of suprafamily feasting (see Silverman 1993a: figs. 16.25–16.28, 16.30). I have interpreted other mounds, such as Strong's Great Temple (Unit 2) and others at the site's center, as Nasca-inclusive temples. And I have suggested that this "central acropolis" was the focus of pan-Nasca devotion and expressive ritual.

Seventeen years of excavations by Giuseppe Orefici provide even more support for my reconstruction of a hyperceremonial Cahuachi. For example, on the north face of Unit 8, Orefici (1987: cover) discovered a temple with a large step-fret band incised on the mud plaster of its massive north contention wall; a plaza fronted the temple. This Step-Fret Temple, dated to Nasca 1, is the earliest ceremonial structure thus far identified at Cahuachi. Therefore, Cahuachi was a sacred site from its earliest Nasca occupation. Furthermore, this temple was deliberately buried or ritually interred in Nasca 3 times, to judge from the most recent material in the fill surrounding the temple and subsequent constructions laid over it (see Orefici 1988: 192, 193, photos 1 and 2).

There is other evidence of Cahuachi's hyperceremonialism. On the floor of one of the agglutinated rooms on the northeast side of Strong's Great Temple, Orefici (1988) discovered a cache of hundreds of broken panpipes, and he has recovered abundant panpipe remains elsewhere at the site, including from the fill of the Step-Fret Temple. These rooms may have been storage facilities for ritual

paraphernalia used in ceremonies as well as facilities for the curation of obsolete and/or damaged symbolically charged objects. On Unit 10 Orefici has uncovered a maze of rooms and corridors with repeated architectural modifications (accesses blocked, rooms filled in), much like my data for Unit 19, a mound that is empirically demonstrated to be ceremonial rather than domestic in nature (see Silverman 1993a: chaps. 12, 13). Orefici also excavated the burial of more than 60 llamas in an area immediately southeast of Unit 19. He recovered the remains of 154 adult and 65 young camelids in construction fill in ceremonial mounds; the animals appear to have been sacrificed and consumed in ceremonial episodes (Valdez 1988: 34, 1994: 677). Strong (1957: 31), too, found "llama remains . . . and other apparently feasting and sacrificial materials" atop Unit 2, his Great Temple. A llama leg was recovered by Miguel Pazos from one of the deep prepared cylindrical shafts on Unit 12B (Silverman 1993a: 68, fig. 5.18). And I excavated a llama burial (Burial 10) on Unit 19, though it dates to after Cahuachi's Nasca 3 apogee.

Although Valdez (1988) reported the remains of only three guinea pigs in his analysis of Orefici's faunal material, I recovered a cache or offering of minimally twenty-three sacrificed guinea pigs at the base of Unit 19 (Silverman 1993a: 168). Clearly, guinea pig was a ceremonial food and ritual offering at Cahuachi. Valdez (1994) also reported the excavation of a *pachamanka* (earth oven) at Cahuachi. The stone-and-mud-lined pit contained maize, beans, sweet potatoes, manioc, achira, jiquima, chili pepper (*ají*), and camelid bones, all resting on achira leaves, below which were charcoal and wood. Around the oven were more food remains and fragments and whole pieces of decorated Nasca pottery. Valdez speculated that a vessel adjacent to the oven contained *chicha* and/or hallucinogenic beverages. The context reported by Valdez is highly suggestive of ceremonial feasting of the kind that would occur at a ritual center and pilgrimage place: recall Strong's (1957: 31) recovery of "a large amount of fine Nazca Polychrome A pottery and an unusual amount of broken panpipes, llama remains, bird plumage and other apparently feasting and sacrificial materials" at the Great Temple.

Iconographically elaborate pottery far outnumbers utilitarian ware during the period of Cahuachi's main occupation on the order of 70:30 percent (Silverman 1993a: tables 16.1–16.4). Few vessels appropriate for food storage were found, suggesting only a limited need to store large quantities of food for long periods at the site. Thus far, the only formal storage facilities identified at the site appear to be the agglutinated room complexes of

Unit 2. From my own small-scale excavations I recovered more than two hundred panpipe fragments, thirteen pyroengraved gourd fragments, a magnificent whole gourd bowl bearing early Nasca supernatural iconography, elaborate textile fragments, including intricate three-dimensional figures of the kind found on early Nasca funerary shrouds and ritual attire, small special objects of unknown function, offerings of feathers and shell, offerings of maize, caches of petrified wood and huarango fruit, a fragment of a stone vase, and various other special items (Silverman 1993a: chaps. 16–21).

Thus Cahuachi appears to have been an extensive nonurban site replete with pyramids, temples, plazas, ritual offerings, sacred paraphernalia, burials, and geoglyphs on the nearby Pampa. Missing from the archaeological record at Cahuachi in Strong's, Orefici's, and my excavations are extensive zones of dense permanent habitation and quotidian activity areas corresponding to epoch 3 of the Early Intermediate Period, Cahuachi's apogee. That lack is more than compensated by the number of contemporary habitation sites recently identified in the valleys of the Río Grande de Nazca drainage.

The Grande-Palpa Region

Nasca 1 appears full blown and as a veritable demographic explosion in all of the portions of the northern half of the Río Grande de Nazca drainage that have been surveyed. I have argued for the possibility of an actual colonization by Paracas 1 people from Ica (Silverman 1994a: 378).

Browne (1992) indicates that there was a significant Nasca 1 occupation in Palpa, including geoglyphs. Cerro Carapo was a particularly large hillside settlement (Browne 1992: 79; Browne, Silverman, and García 1993: figs. 1, 2). Several sites had civic-ceremonial architecture, and Browne notes a dense concentration of civic-ceremonial and domestic occupation at Llipata. Reindel and Isla (1999) confirm Browne's recognition of a significant rise in valley population. This must speak to economic prosperity and stability in Palpa.

Browne (1992) observed a decrease in the Nasca 2 settlement pattern in one part of the valley, abandonment in another, expansion elsewhere, and continuity at Llipata. Other Palpa Valley sites were occupied for the first time in Nasca 2.

Palpa had a significant Nasca 3 distribution of habitation sites in number and size. Browne saw settlement expansion and increased civic-ceremonial activity in Palpa in Nasca 3, sometimes at the expense of former habita-

tion zones. He did not observe the predominance of any domestic site in terms of scale or special architecture. However, "sites of civic/ceremonial character assume a more prominent position in the hierarchy of site functions" (Browne 1992: 79).

Browne's observations have been confirmed by Reindel and Isla (1999). Lumping Nasca 2 and 3 together, they state that both sides of the Palpa Valley were occupied and that there was a "clear settlement hierarchy." Their hierarchy appears to have two levels. There are the simple settlements that Browne observed and at Los Molinos there is impressive civic-ceremonial architecture. Reindel and Isla (1999: 186–187) interpret Los Molinos as "a planned settlement with monumental [adobe] architecture . . . walls that are almost one meter thick extend over long stretches in a right-angled pattern. Long stepped walkways provide access to large spaces situated atop terraces. The terraces cover the lower area of the valley slope upon which the settlement is situated." Reindel and Isla (1999) state that there were spacious residences or governmental buildings in the central areas of the site and that simple perishable architecture of reed huts lay on the periphery. Elsewhere they speak of "great enclosures, palaces, residences . . . where the representatives of power lived" (cited in *El Comercio*, September 21, 1999: A10). For Reindel and Isla (1999), Los Molinos implies "a type of regional governmental center of the Early Nasca Period." I assume that by this they mean it is not coincident that the florescence of Los Molinos occurred during Cahuachi's apogee. Importantly, the published photographs of Los Molinos's adobe wall construction techniques and formal and spatial organization of architecture (see Reindel and Isla 1999: fig. 171) are readily comparable to those seen at Cahuachi (compare with Orefici 1993: fig. 83; Silverman 1993a: figs. 12.6, 12.34).

Browne (1992: 79–80) recorded Nasca 4 sites in Palpa, though these are so reduced in number from Nasca 3 that he legitimately questioned the existence of Nasca 4 as a temporal unit. Browne (1992: 80) offered two plausible explanations of the significant change on the landscape: "It prompts the thought that either sample bias or a classificatory problem is involved. This author [Browne] is inclined to the view that Nasca 4 is a stylistic but not a chronological division; a not necessarily sequential variety of Nasca 3 . . . The alternative is to postulate at the end of Nasca 3 a collapse of the settlement system and by implication the social system responsible for it, and a drastic decline in population." At least in the surveyed areas of the northern Río Grande de Nazca drainage, if we eliminate Nasca 4 we would see great continuity in the settlement pattern between Nasca 3 and

5, except for the decline of Cahuachi after Nasca 3. Unfortunately, Reindel and Isla (1999: 187) lump Nasca 4 and 5 in their recent study of Nasca settlement patterns in Palpa, making it impossible to assess the situation discussed by Browne. Clearly, more fieldwork is needed to resolve this issue.

Almost no Nasca 3 civic-ceremonial sites were reoccupied in Nasca 5 times in Palpa. Several became burial grounds (i.e., Los Molinos), and various habitation sites were abandoned and others relocated (Browne 1992). Browne (1992: 80) realized that these changes were tremendously significant. He suggested they implied "a major change in the structure of social relations." Browne also identified various geoglyphs dating to Nasca 5 times, though not as many as in earlier Nasca phases (see Silverman and Browne 1991: table 1). Reindel and Isla (1999) state that there are fewer Nasca 4–5 (lumped, as indicated above) sites than early Nasca ones and that some sectors of the valley appear to have been abandoned.

Reindel and Isla associate the Nasca 4–5 decrease in settlement with the emergence of a few larger sites. One of these is La Muña, the greatest known Nasca burial site (see Reindel and Isla 1999; see also Rossel Castro 1977: 152–154). It is a true Nasca necropolis with impressive adobe mortuary architecture and apparently functionally associated major civic-ceremonial building complexes that stretch over several hundred meters along the valley hillsides (Reindel and Isla 1999). Reindel and Isla's recent excavations have revealed important burial chambers that are up to 13 meters deep and measure some 40 by 40 meters at the upper range of their size.

The location of La Muña is strategic. It overlooks the union of the Grande, Palpa, and Vizcas Rivers—a tinkuy that, at the same time, constituted an important tract of continuous agricultural land. There can be no doubt about the impressive architecture of the site and its former wealth. Reindel and Isla (cited in *El Comercio*, September 21, 1999: A10) conclude that "La Muña is like a capital of the zone and a complex with monumental planned architecture that concentrated the elite of this millennial culture . . . the tombs found at La Muña demonstrate that well-defined social classes existed."

In Palpa Browne (1992: fig. 8) recorded forty-eight sites with Nasca 6 occupations, none of these the principal one. This is a reduction of about 30 percent from the Nasca 5 settlement pattern. According to Browne (1992), the decline in occupation in parts of the valley is so pronounced by Nasca 7 that almost all settlement is confined to the west bank of the upper Palpa Valley. Browne did not identify any Nasca 8 sites. Reindel and Isla (1999)

observed a slight increase in the number of Nasca 6–7 sites over the Nasca 4–5 pattern, though these are fewer than existed in the early Nasca phases. They argue, however, that their late Nasca sites are larger than in the previous phases with a greater number of residents and that various late Nasca sites present evidence of greater construction planning. They also note a decrease in geoglyph manufacture in late Nasca times.

Santa Cruz Valley

In 1932 Heinrich Ubbelohde-Doering (1958) worked in the narrow, arid Santa Cruz Valley to ascertain the range of grave types and the kinds of pottery found together. He did not focus on the nature and distribution of non-mortuary Nasca sites (see Neudecker 1979; Ubbelohde-Doering 1958). I am unaware of any other published information about the Nasca occupation of Santa Cruz. Johnny Isla (personal communication) has recovered Nasca sherds at 2,167 meters above sea level around Tibillo in the upper Santa Cruz Valley, though the pottery's continuous distribution up the Santa Cruz Valley has not been demonstrated by systematic survey.

The Southern Tributaries of the Drainage

Habitation Sites

At Ocongalla Zero, in the Nazca Valley proper, Kroeber noted the existence of "reed structures" and a reed-wall enclosure (i.e., cane architecture, perhaps originally wattle-and-daub construction). He identifies these as "dwellings." They are associated with "fireplaces" and "a few mussel-shell fragments, corn cobs, pallar beans, 'llama' dung and bones, a half gourd, much ash, some cotton cloth" (Kroeber and Collier 1998: 42) and with Nasca 1 and other unidentifiable sherds (see Kroeber and Collier 1998: fig. 16).

At Pueblo Viejo/Agua Santa (see Schreiber 1998: 265), also in the Nazca Valley, there are Nasca occupations corresponding to Nasca 2 and 3, 5 and 6, and 7 and 8 (Isla, Ruales, and Mendiola 1984). The Nasca 2–3 occupation corresponds to three levels of terraces made of river cobbles. On one of these terraces there are other walls forming rooms; Isla, Ruales, and Mendiola (1984: 8) appear to say that these walls are low and made of adobes of irregular shape. Excavations on these terraces revealed three burials and a hearth. By the description, the terraces ap-

pear to correspond to a habitation site with associated burials.² The Nasca 5 and 6 and the Nasca 7 and 8 occupations are represented by burials.

There is an intensive Nasca occupation at Usaca, farther downstream. Isla (1992) reports on two sites, Usaca 1 and Usaca 2. At Usaca 1 Isla recovered evidence of a multicomponent Nasca ordinary domestic occupation involving wattle-and-daub structures, floors, hearths, and a trash pit. The best represented Nasca phases are Nasca 4, 5, 6, and 7 (Isla 1992: 124, 129), though Isla (1992: 129) refers to the existence of earlier sherd material at the site. Tombs dating to Nasca 4, 6, and 8/Loro also were excavated.

Usaca 2 was occupied between Nasca 2 and 6 with the clearest and most intensive domestic occupation corresponding to Nasca 4 (Isla 1992: 147). Nasca people living at Usaca 2 built rectangular rooms of differing size using naturally occurring sedimentary rock cut in blocks and laid with mud mortar to create low (25–35 centimeters high) walls. Isla (1992: 136) plausibly speculates that these walls must have supported a perishable superstructure since they are so low. Isla (1992: 137) argues that these enclosures were not ordinary habitation zones. Sector A of the site was reutilized for burial in Nasca 5 and 6 times.

Proulx's (1999) survey of the lower Nazca Valley and lower Grande Valley has recorded at least twenty more Nasca habitation sites and scores of cemeteries, some with evidence of fine adobe-walled thatch-roofed tombs. Proulx describes most of the Nasca habitation sites as "small hamlets" with the exception of one extensive multi-occupational site opposite Coyungo, in the lower Grande Valley. Proulx observed that many of the smaller Nasca habitation sites were located near springs (pukios).

Katharina Schreiber has surveyed Aja, Tierras Blancas, part of the Nazca Valley proper, Taruga, and Las Trancas. She does not report the existence of Nasca 1 sites in this area (Schreiber 1999; Schreiber and Lancho Rojas 1995). Nasca 2, 3, and 4 are lumped in an "Early Nasca" period. Nasca 6 and 7 are called "Late Nasca." I cite her data at length.

In Early Nasca times sites were distributed in the lower valley, and in the zone of filtration and the upper valley. In the lower valley Cahuachi, a major ceremonial center . . . occurs along with numerous cemeteries . . . Permanent habitation sites seem to have been lacking in the lower valley in Early Nasca times, probably owing to the heat and wind.

In contrast, numerous habitation sites, mostly small villages, were located in the zones of infiltration and

upper portions of the Aja and Tierras Blancas valleys. . . . Not a single habitation site is found in the dry middle valley, although numerous cemeteries and two small ceremonial centers (Pueblo Viejo and Cantalloq) are present. Likewise, in the Taruga and Las Trancas valleys, no habitation sites are found in the middle valleys.

In the Nasca Valley, settlements were first established in the middle valley in Nasca 5. The middle Taruga Valley includes a very large Nasca 5 site, and several major Nasca 5 sites were established in the middle Las Trancas Valley as well. . . .

It is interesting that while people were moving down into the middle valley, others were moving farther up-valley in Nasca 5. New and larger settlements were established at elevations about 1,050 m asl in the Aja Valley, and above 1,150 m asl in the Tierras Blancas Valley.

The shift in settlement locations is even clearer by Late Nasca times . . . There was a complete change from the pattern of numerous small villages seen in Early Nasca times to a pattern characterized by a limited number of very large towns. In the middle Nasca Valley there is a cluster of one large and two small sites; in the upper Tierras Blancas there is a similar cluster. In the middle Taruga Valley growth of the large Nasca 5 site to cover some 16 hectares made it the largest site in the region in Late Nasca times.³ In the middle Las Trancas Valley several large villages were occupied in the Late Nasca period. Our data indicate that the Late Nasca period was a time of population aggregation and increased sociopolitical complexity. . . . the location of major sites in the dry middle valleys indicates very strongly a reliance on puquios [filtration galleries] in Late Nasca times. (Schreiber and Lancho Rojas 1995: 249–251, figs. 12–15)

Vaughn (1999) has excavated a habitation site at Marcaya in the Tierras Blancas Valley. He dates the site to Nasca 3–4. Here again we face an interpretive issue created by the lumping of ceramic phases. We are not provided with enough information to determine if the decline of Cahuachi had an effect on Marcaya or if the principal occupation of the site is Nasca 4.

Ceremonial Centers

In the literature on the southern drainage there are only sketchy mentions of ceremonial sites other than Cahuachi. It appears that Nasca civic-ceremonial centers

occur only below 600–700 meters above sea level here and throughout the drainage. There are no published reports of Nasca civic-ceremonial architecture in the drainage's tributaries south of the Nazca Valley in any of the Nasca phases save the Nasca 8/Loro occupation at Huaca del Loro, which, arguably, is not Nasca (see discussion in Silverman 1988b *inter alia*).

In the Nazca Valley proper, civic-ceremonial architecture occurred only in “early Nasca” times (Schreiber 1998, 1999). Kroeber (Kroeber and Collier 1998: 42) recorded the existence of an adobe structure at Ocongalla Zero. As described, the structure appears to be a mound raised in typical early Nasca fashion with a construction fill of “three layers of old cornstalks about 30 cm apart, some Nazca-type sherds, a half-gourd, mussel shells, and miscellaneous debris—all in small quantities” (compare to Silverman 1993a: figs. 4.7, 4.8, 5.15, 5.28). At Cantalloc Kroeber found an early Nasca “cluster of [adobe] walls suggest[ing] a low pyramid”; early Nasca burials had been placed in and around the complex (Kroeber and Collier 1998: 71). At Soisongo A Kroeber recorded “two small pyramidal structures . . . The smaller pyramid, or Mound X . . . is an 8-m-sq mass bounded by an adobe wall averaging 1 m or more in height and filled mainly with gravel . . . together with layers of maize straw. The wall was built of wedge-shaped adobes set on their base ends . . . The larger rectangular Mound Y . . . is 20 m east-west by 12 m north-south, plus an 8-x-6-m annex extending out” (Kroeber and Collier 1998: 62). The description of Mound X conforms to what is known about early Nasca ceremonial mounds. Schreiber (1999: fig. 11.7) identifies an “Early Nasca platform mound–cemetery complex” at Pueblo Viejo.

The Lower Grande Valley

Kroeber (1944: 24) was quite right in stating that the area in which Nasca culture developed is “coastal but not maritime.” Perhaps the small oases of the lower Grande played a significant role in the economy of the Nasca period (and in precolumbian times in general) because they are within easy walking distance of the sea and could provide marine resources to settlements inland. In the Monte Grande oasis of the lower Grande River Carmichael (1991: 9–10) identified the following sites.

- Site 43: small habitation(?) site with platforms of bundled vegetal fiber (0.30 hectares); Nasca 2 and 3
- Site 44: ceremonial center with burials (1.50 hectares); Nasca 2–4

- Site 45: large village with burials (6.40 hectares); Nasca 1–7
- Site 49a: small cemetery (0.03 hectares); Nasca 4
- Site 56: small cemetery (0.08 hectares); Nasca 3 (maybe also Nasca 4)
- Site 57: small village with burials and an artificial mound (0.60 hectares); Nasca 1 and early Nasca
- Site 58: small cemetery (0.05 hectares); Nasca 3 and/or 4
- Site 60: small village with burials (0.38 hectares); Nasca 3–5

Geoglyphs

Most attention to the geoglyphs by archaeologists, other scholars, and informed and uninformed amateurs has been focused on the Pampa. In the past ten years, however, our understanding of the geoglyphs has radically changed and improved as a result of my project in Ingenio–middle Grande (Silverman 1990b; Silverman and Browne 1991) and Browne’s (Silverman and Browne 1991) and Reindel and Isla’s (1999) projects in Palpa. This is because among their various goals, the projects specifically sought to recover information on the manifestations of geoglyphs in the valleys and their relationship to valley settlements (e.g., Silverman 1993b: 105; Reindel and Isla 1999). Geoglyphs are widespread in the southern tributaries (personal observation) but have not yet been systematically described. David Johnson (personal communication, 2000) has observed geoglyphs quite far down the lower Grande Valley.

My survey recorded dozens of geoglyphs up to 525 meters above sea level. In addition to these, the 1944 aerial photographs reveal many more that were later destroyed. Most geoglyphs in Ingenio–middle Grande are trapezoids. Combinations such as trapezoids and spirals, straight lines, cleared fields, and major geoglyph complexes were identified, but no biomorphic figures. Based on surface pottery, I have argued that the vast majority of geoglyphs on the borders of the Ingenio and middle Grande Valleys were made by Nasca people (Silverman 1990b; Silverman and Browne 1991).

The lack of geoglyphs above 525 meters above sea level in the Ingenio Valley remains to be explained. While it is true that many hillsides bordering the upper reaches of the Ingenio River are steeper than those lower down, rendering them inappropriate for the elaboration of geoglyphs, nevertheless, others could or would have been used were they located elsewhere in the valley. Also, many upper valley quebrada mouths and remnant hills

or terraces in these quebradas would have been considered ideal geoglyph locations by people living lower downvalley.

Just as I have argued that the Nazca Lines are Nasca Lines, that is, that the vast bulk of the geoglyphs were made by Nasca rather than later people, so, too, Reindel and Isla (1999) note a virtual absence of post-Nasca potsherds in association with Palpa's geoglyphs. Unlike the Ingenio–middle Grande data, however, in Palpa there is evidence of figural geoglyphs, including human figures and a whale that Reindel and Isla (1999) compare to the one on the Pampa.⁴

Notes

1. Specifically, I have argued that in ancient times Cahuachi was reached from Ingenio by crossing a trans-Pampa geoglyph, the "Camino de Leguía," over which the Pan-American Highway was elaborated two thousand years later (see Silverman 1990b: 439, fig. 2, 1993a: 324–325, fig. 23.1). Western ethnocentrism would demand that this road leave from the heart of Site 165 and enter the center of Cahuachi. But such was not the case. The road exits Ingenio from above and west of Site 165. It crosses the Pampa, descends to the Nazca Valley, and passes by the eastern edge of Cahuachi on its way south (see Silverman 1990b: fig. 2). The route of the Camino de Leguía was probably determined by geomorphology: the IGN/Palpa/Hoja 30m topographic map shows that the Camino de Leguía departs Ingenio toward the Nazca Valley at the top of the major quebrada leading out of the Ingenio Valley; this is also where the contemporary Pan-American Highway exits Ingenio's angostura to move across the Pampa toward the modern town of Nazca. Equally significant is the fact that the Camino de Leguía's descent to Cahuachi crosses the Nazca Valley precisely where water is permanently present (see Silverman 1988a: 425, 1993a: 305). Here the hypothesized pilgrims could have refreshed

themselves before entering the ceremonial center proper (or proceeding to valleys farther south).

2. Schreiber (1999) describes the early Nasca occupation as a platform mound and associated cemetery complex.

3. Schreiber (1998: 265) says that this site dates to Nasca 5–7, "with most artifacts pertaining to Nasca 6."

4. Reindel and Isla's (1999: 191–195) data are so interesting that I cite them here at length.

on the mesa and on the cliffs of a ridge (the so-called Cresta de Sacramento) countless geoglyphs can be seen. . . . Lines occur in varying widths and lengths. They extend as straight or zigzag lines, mostly over several hundred meters. . . . Especially striking are the long trapezoids that extend atop the flat mesas of the mountain ridge, mostly in a northeasterly to southwesterly direction. . . . Because the corners almost all point to the original location of the river, it can be assumed that there exists a connection between the river and the geoglyphs. Essentially smaller than the geometric drawings but all the more spectacular are the figurelike glyphs. They are mostly composed of narrow lines approximately 0.40 to 0.50 meters in width. Atop the Cresta de Sacramento several spirals, a half-moon-shaped knife (a so-called tumi), and human figure can be seen. The depiction of a whale is especially intricate and appears very similar to the whale on the Pampa of Nazca. Of note are also very small human and animal figures, often only a few meters tall and very difficult to recognize, that are located exclusively on mountain slopes. They are often overlaid with other figures, lines, or open spaces and consequently must be older than these. This assumption is being confirmed by means of the pottery fragments lying on the surface that, for the most part, date from the Proto-Nazca [Nasca 1] Period . . . or even from the Late Formative Period. Near the large geoglyphs atop the mesas is pottery almost exclusively from the Early, Middle, and Late Nazca Periods. In fact, the construction of geoglyphs appears to have come to an end with the beginning of the Middle Horizon.

The Identifiable Components of Nasca Settlement Patterns in the Río Grande de Nazca Drainage

Nasca Habitation Sites

Location and Setting

Nasca habitation sites appear to have been self-sufficient, with easy access to irrigable agricultural land. Because the upper valleys of the Río Grande de Nazca drainage are so narrow, agricultural land is and was at a premium. By preference, Nasca people established their habitation sites on appropriately sloped hillsides of the valleys so that, using naturally occurring fieldstone, they could create terraces that expanded horizontal surfaces.

Other geotopographical settings also were used. For instance, there are habitation sites in the upper Ingenio Valley located in the mouths of huaicos where the naturally occurring boulders were used as the prime building material. In the wide middle Grande there was a distinct preference for the raised terraces of the east side of the valley over the flat land on the opposite bank in addition to whatever sites may have existed in the valley bottom and subsequently been destroyed. The scarcity of Nasca habitation sites of all phases on both sides of the lower

Ingenio Valley is probably due to site burial by alluviation and site destruction by industrialized farming.

I explain the keen Nasca interest in the upper valleys of the tributaries of the Río Grande de Nazca drainage (see, e.g., Schreiber 1999: fig. 11.7) by the readily available and easily exploitable water there, both as seasonally charged flood water and as pukios (see CD: pukios: maps, texts). The valleys of the Río Grande de Nazca drainage lack the classic inverted V-shaped delta of most of the other coastal valleys of Peru. Insofar as I have seen, the valley necks in the Río Grande de Nazca drainage were not of critical interest to Nasca people as we know valley necks to have been for other coastal people (see, e.g., Willey 1953: fig. 11), including the Nasca 1 people of Ica (see Massey 1986). As intriguing is the apparent lack of Nasca interest in the dramatic constriction of the Ingenio Valley at La Legua. In late prehispanic times both sides of this angostura were heavily occupied, presumably to assure access to the rich, relatively wide lower valley to the west and middle valley to the east.

The greatest number of habitation sites in the upper valley occurs in Nasca 1 with a decrease in Nasca 2 and 3,

a drop again in Nasca 4 and 5, and a dramatic drop in Nasca 6 and 7; no Nasca 8 habitation sites were identified. There appears to be a Nasca 6 preference for the south side of the upper valley; the same preference appears to characterize the limited Nasca 7 settlement pattern. The lower end of the upper Ingenio Valley (above the 500-meter contour on Section 3 of the SDMs) shows intensive exploitation in Nasca 1 through Nasca 3, a significant decline in Nasca 4, and somewhat of an increase in Nasca 5. No Nasca 6, 7, or 8 domestic occupations were detected here.

Overall in Section 3 of the SDMs (corresponding mostly to the middle valley), there appears to be a habitation preference for the south side of the Ingenio River in Nasca 1 through Nasca 7 times; no Nasca 8 habitation sites were identified. The profusion of sites on Section 3 may be interpreted several ways. There may have been a series of closely spaced small settlements, or the individual sites may have been slightly dispersed sectors of a fewer number of individual sites, or discrete sites may have been occupied briefly within what archaeologists recognize as a single ceramic phase, and such sites may have moved across the hillside within that recognizable phase, thereby creating the many sites we see. On the north side of the valley, Sites 441 and 443A–B may constitute a unit in Nasca 1 just as there is a Site 106 complex in Nasca 2, clusters at Sites 75-76-356-172-174 and Sites 340-324-343-344-345 in Nasca 3, and clusters at Sites 75-172-174-176 and Sites 340-342-343-345 in Nasca 5.

There is more evidence of habitation in the middle Grande Valley, as seen in Section 5 of the phase-by-phase SDMs, than has been identified in the lower Ingenio Valley. This is surely due to the choice made by ancient Nasca people to settle on the elevated river terrace on the east side of this sector, which saved these sites from subsequent destruction. There is a distinct increase of settlement in the middle Grande in Nasca 3 times, making the Nasca 4 decline all the more notable. The decline appears to continue into Nasca 5. No Nasca 6, 7, or 8/Loro domestic occupations were identified here.

Size of Habitation Sites

There has been almost no excavation at Nasca habitation sites. Also, caution must be exercised in assessing the size of any multicomponent habitation site on the basis of surface survey. This is true for those sites with multiple Nasca phases represented on the surface and for those with pre-Nasca and, especially, post-Nasca occupations. Bearing this in mind, it is clear that in the Ingenio Valley

most Nasca habitation sites are small, less than 1 hectare to several hectares in size. Site 220 (fig. 5.14) is a comparatively large terraced hillside Nasca 1 habitation site at 9.60 hectares, but it appears to be undifferentiated. On the other hand, much smaller sites may have internally differentiated architecture. Thus Site 455 (figs. 5.25–5.30), which also is a single component Nasca 1 site, measures 4 hectares but has two sectors of finely executed planned architecture (figs. 5.27, 5.28) amid the other ordinary hillside terraced habitation architecture of the site.

Other habitation sites with additional functions (i.e., those with habitation and civic-ceremonial features and/or cemeteries and/or geoglyphs) may be quite large. Thus, taken as a multicomponent Nasca composite, Site 165 (fig. 4.1) could measure 100 hectares, though phase by phase it is smaller. Site 165 was the largest Nasca 1 habitation site in the Ingenio Valley; in Nasca 2 times it may have been second in size only to the Site 106 complex, which has a major civic-ceremonial component; it was again the largest habitation site in the valley in Nasca 3 and Nasca 5.

In Palpa, by comparison, Nasca habitation sites range in size from 0.25 hectares to 8 hectares in Nasca 1 and Nasca 2, 0.25 hectares to 6 hectares in Nasca 3, 0.50 hectares to slightly under 3 hectares in Nasca 4 and Nasca 6, 0.25 hectares to 8 hectares in Nasca 5, and from just over 1 hectare to a little more than 2.50 hectares in Nasca 7 (Browne 1992: gazetteer).

Nasca Cemeteries

Archaeologists have used data from cemeteries to reconstruct social organization and level of sociopolitical complexity and to consider the symbolic aspects of mortuary behavior. There is a significant body of literature that provides well-documented reasons for exercising caution in the typical one-to-one correlation archaeologists often make between grave wealth, status in life, and level of complexity of the surrounding sociopolitical milieu (see, e.g., Dillehay 1990: 233; Linares 1977). I have previously discussed Nasca burial patterns at Cahuachi (Silverman 1993a: chap. 14), and Carmichael (1988) has analyzed Nasca burial patterns from a sample of sites in the Río Grande de Nazca drainage and Ica Valley. Carmichael and I reached the same conclusion: Nasca mortuary patterns do not show rigid categories of socioeconomic differentiation: the basis of observable ranking was gender and age determined, with adults and males,

in general, having more status, being the recipients of more attention than youths and women. However, new information from the badly looted mortuary facilities at La Muña in the Palpa Valley reveals that it was a truly exceptional Nasca 5 burial site (see Reindel and Isla 1999). A plausible argument can be made that La Muña pertained to the local Nasca 5 elite and that the site marks the emergence of a distinct identity by this segment of the Nasca population.

Archaeologists should be interested in the landscape of death, understood as the physical and social space of disposal areas. We need to ask how cemeteries were arranged; where they were located with regard to habitation, ceremonial, civic, defensive, and other categories of sites; what other factors may have intervened in choice about cemetery location; and so on. We are challenged in some of our interpretations by the fact that Nasca cemeteries are looted, and, furthermore, looting may be obscuring the primary habitation function of many sites; this is a problem that plagues Nasca archaeology.

Discrete cemeteries apparently could be located anywhere; by logical preference they were placed off the potentially flooded valley floor. Cemeteries also are associated with habitation sites where burials were placed in and around domestic contexts or in separate facilities adjacent to the habitation area. Burials also were made at civic-ceremonial sites, both in cemeteries at these sites and within their architecture. In the case of a few specific burials dating to Nasca 5, mortuary facility siting appears to have been made with reference to culturally valued naturally occurring and artificial features such as water and geoglyphs (e.g., La Muña, Site 81). Rarely, Nasca cemeteries were separated from other functional areas at sites by physical features such as walls.

In the Río Grande de Nazca drainage, burials of all Nasca phases are known, but they vary in distribution. In the Ingenio Valley, for instance, Nasca 1 burials are virtually unrecognized in the upper valley despite the widespread presence of Nasca 1 habitation sites. Nasca 1 burials are, however, present lower down. In the middle Grande there is a preference for the east side of the valley for cemetery location as well as for habitation sites. Nasca 2 and Nasca 3 mortuary sites are well spaced and distributed throughout the Ingenio Valley; there is an exclusive preference for the east side of the middle Grande Valley. Nasca 4 burials are present throughout the Ingenio Valley, well spaced and distributed. There is one Nasca 4 mortuary expression on the west side of the middle Grande; all other Nasca 4 burials in the middle Grande appear to be restricted to the east side of the valley. There is a florescent Nasca 5 burial distribution

throughout the Ingenio Valley and on both sides of the middle Grande Valley. Whereas there are few Nasca 6 and even fewer Nasca 7 habitation sites in the Ingenio and middle Grande Valleys, there is a significant mortuary settlement pattern for both phases, including burials on both sides of the middle Grande. Nasca 8/Loro burials are rare but known. The temporal and spatial distribution of Nasca burials in the Ingenio–middle Grande area corresponds well to published Nasca burials from elsewhere in the drainage and in Ica (see Carmichael 1988: app. 1; Proulx 1970; Strong 1957).

Nasca cemeteries vary internally and among each other. In the survey area shallow, circular, and irregular unprepared pits were the most common Nasca burial form identified. Evidence of urn burials occasionally was observed. Also recognized were prepared tombs. Mortuary architecture could consist of simple fieldstone-lined pits covered by stone slabs (these are also known in the upper Ica Valley: see Massey 1986: 323) and adobe- or stone-lined shafts of varying depth with and without barbacoas. Rarely, and most notably at La Muña, chambered architecture was observed; this could be constructed of adobe or fieldstones set in mud mortar. The raw material for tombs was readily available on the hill-sides in the case of fieldstone or in the valley bottom in the case of mud for adobe. The circle-within-a-square tomb arrangement at La Muña (Reindel and Isla 1999: figs. 172 center, 173) may be replicated at decreasing scale at a few Ingenio Valley sites (figs. 9.3, 9.12). This architectural organization appears to be restricted to Nasca 5 burials and may be significant, though its meaning is unknown.

Data on Nasca burials from elsewhere in the Río Grande de Nazca drainage indicate various of the burial patterns described above. Kroeber (Kroeber and Collier 1998), Strong (1957), and I (Silverman 1993a: chap. 14) have reported Nasca 3 burials from mound contexts at Cahuachi. Kroeber's Unit A burials encompassed cists with and without barbacoas as well as urn burials; he found several similar burials in open areas (see analysis in Silverman 1993a: 210–213; see original data in Kroeber and Collier 1998). I was uncertain if the Unit 19 burials from my project at Cahuachi were intrusive in the room architecture of the mound or whether the burials and adobe wall chambers were meant to function together. The Unit 19 burials are cylindrical cists covered with fine barbacoas (see Silverman 1993a: figs. 14.2, 14.3, 14.5–14.13). A looted urn burial also was observed (Silverman 1993a: fig. 14.4). Strong found one burial (his Burial 8) in a 70-centimeter-wide circular shaft under the corner of two massive conical adobe walls in Cut 3 on Unit 6. This

burial may have been dedicatory for the architecture above it. Strong (1957: fig. 4) also discovered Nasca 5 and 6 burials in two cemetery areas between mounds at Cahuachi. Burials in these areas included circular pits without barbacoas, circular and oval shafts (some having rough adobe walls) with fine barbacoas, a rectangular cist with fine adobe walls and a large barbacoa, rectangular cists with plastered walls but no roof, and urn burials. At Usaca Isla (1992) noted urn burials, pits excavated into a thick stratum of clay that were covered by a barbacoa, and barbacoa-covered circular pits against whose slightly inclined sides fieldstones were set in mud. Carmichael (1988) analyzed data from other Río Grande de Nazca drainage Nasca burials that were excavated by William Farabee, A. L. Kroeber, and Giuseppe Orefici. His sample shows these same practices.

Nasca Civic-Ceremonial Sites

Nasca ceramic iconography portrays a world of ritual in which human beings participated through ceremony, costume, props, dance, and music. In the early Nasca world, Cahuachi was the preeminent ceremonial center (Silverman 1990a, 1993a, 1994b *inter alia*). Cahuachi's architecture is characterized by the energetically cheap use of hills as the basis of ceremonial architecture, the artificial leveling of the naturally truncated face of a hill, the use of chala fill or the layering of particular kinds of fill to raise or level the underlying configuration of a hill, the presence of organic remains and highly decorated pottery in fills, the flattening and clearing of hill summits, the creation of flat terraces or patios on or below mounds, and the creation of enclosures within which there may be terraces, rooms, patios, and mounds (see Silverman 1993a: chaps. 5, 6). These physical features were key elements of Nasca spatial organization and religious behavior. They are cultural signatures of Nasca, elements of the Nasca grammar of the built environment, and crucial diagnostics of the Nasca landscape, indeed, of Nascaness.

None of the mounds identified outside Cahuachi appears to have the architectural complexity of the greatest of Cahuachi's mounds (e.g., Unit 2 or even the small Unit 19; see Silverman 1993a). Nevertheless, many of the construction techniques observed at Cahuachi are present elsewhere. Some of the civic-ceremonial sites are simple flattened, small, individual mounds; others are great modified hills; a few are whole complexes of mounds, patios, and associated geoglyphs. I am struck that so many Nasca civic-ceremonial sites in the drainage do not share Cahuachi's pervasive organization of space in

terms of the mound and plaza pattern (see Silverman 1993a: chap. 6).¹

In the Ingenio and middle Grande Valleys, seven basic types of civic-ceremonial center can be identified on the basis of surface evidence.

1. *Massive hills.* A large natural hill could be modified, thereby creating a huaca (e.g., Sites 106 and 515A). Where needed, a thick chala fill was laid to even out irregularities in the natural topography of the hill. The hill face was leveled to form flat terraces, and summits were deliberately flattened. Site 106 is particularly notable as a huge bilobal hill remarkably similar in naturally occurring appearance to Unit HH at Cahuachi (see Silverman 1993a: fig. 2.4, right side).
2. *Terraced hillside faces.* The terracing of hillsides was an energetically and materially cheap manner of achieving the impression of monumental architecture. At Cahuachi the faces of various hills have been terraced to create the site's huacas (see Silverman 1993a: chap. 5). In the survey area, too, the river-facing sides of hills were terraced to create the appearance of truncated mounds. These terraces had contention walls made of fieldstone or adobe. There could be from one to at least six terraces. Examples include Sites 182, 195, 202, 301, 376, 380, 396A, 439, and 516.
3. *Flattened hill summits.* These could occur in the context of habitation sites as encapsulated civic-ceremonial sectors (Site 39 is the paradigmatic case: see figs. 5.10, 5.11), or they could be isolated from other site functions (e.g., the hill at Site 81 has an artificially leveled platform delineated by a fieldstone wall). To achieve the flat top Nasca people occasionally had to artificially raise and level the hill topography by adding a fill of earth and chala. Flattened hill summits at Sites 39, 81, 198, 396C, 439, 445, 466, 469, and 500 are exemplary of this kind of civic-ceremonial site.
4. *Cleared areas.* Related to the cleared and flattened hill summits are the low-lying (i.e., ground level) areas that were cleared of surface material. But these are not geoglyphs, properly speaking. Examples are found at Sites 321, 369, and 372.
5. *Mounds.* Mounds were created either by taking advantage of naturally occurring hills or erecting volumetric architecture. These mounds may occur singly or multiply and vary in size. Mounds could be constructed of earth and rock (e.g., Sites 79, 287, 301), of fieldstone and chala fill (e.g., Site 80), of field-

stone and/or river cobbles set in mud mortar (e.g., Sites 165, 386), of adobe walls and layers of chala (Site 165), and of solid adobe (Sites 165, 279). Thin or thick layers of vegetal fiber fill could be used to even out the naturally occurring irregularities (e.g., Sites 370, 381). Rarely, there is evidence that a perishable superstructure of wattle and daub with a cane roof existed on top of these mounds (e.g., Site 279). The largest of these mounds in the survey area is one at the Site 305 major geoglyph field (see Silverman 1990b: fig. 20). This mound measures 80 by 30 meters and is made both by the accumulation of material cleared off the site surface to create the geoglyphs as well as deliberate construction using a fill of thin layers of chala alternating with dirt and contained by walls made of large rocks. Of particular interest is the significant amount of fancy Nasca pottery present in the fill of this mound, just as has been observed at Cahuachi. Along the east side of this mound there are huarango posts placed at approximately 5-meter intervals in the chala fill, just as huarango posts are associated with chala fill at Unit 8 at Cahuachi, a feature I have explained as structural support to disperse the weight of the fill (see Silverman 1993a: 65, fig. 5.11). Some mounds are associated with patios and plazas on or below them (e.g., Site 446).

6. *Architecture*. Within the analytical category of civic-ceremonial architecture I think it is important to distinguish *huacas* in the sense of volumetric mounds from *architecture* in the sense of physically constructed compartmentalized space. Subject to testing in the field, it is my belief that the latter is more civic (i.e., special-purpose settings for nondomestic, not necessarily ritual activities, possibly used by an elite, possibly elite habitation in some cases) than ceremonial (i.e., a venue for inclusive ceremonies of Nasca religious ritual). Small planned units of architecture at these sites may consist of square rooms built of loaf-shaped adobes or fine fieldstone walls. Rarely, traces of red, white, and black paint have been observed on walls and whitewash on floors. Examples of civic-ceremonial architecture are found at Sites 296, 313, 455, 458, and 462.
7. *Enclosures*. Several rectangular enclosures have been identified. These are built of fieldstone walls and, as at Site 552, may contain platforms and patios, rooms, and fieldstone terraces interpreted as habitation loci (elite?) and/or possibly civic settings. Other examples of enclosures are found at Sites 119 and 165.

Other Functions at Civic-Ceremonial Centers

Civic-ceremonial sites also were desirable places for burial, but on the basis of disturbed surface evidence at multicomponent sites it is usually difficult to determine the chronological and structural relationship between the two functions when they occur at the same site. Burials could be earlier than, contemporary with, and later than the civic-ceremonial foci. Where potsherds from civic-ceremonial loci are contemporary with potsherds from looted areas at the same site, I take them to be contemporary and the two site functions related. Certainly, burials and mound architecture are intimately related at Cahuachi (see Kroeber and Collier 1998: 78–81; Silverman 1993a: chap. 14).

Types of Adobes Recorded on Survey

Four basic types of adobes were observed during the course of survey: conical, loaf shaped (encompassing significant height range from low to high), cylindrical, and rectangular (see data on adobes in Kroeber and Collier 1998: chap. 4; Silverman 1993a: 94–95). Conical adobes were exceedingly rare, in contrast to their common occurrence at Cahuachi (see Silverman 1993a: 94–96) and at other Nasca sites recorded by Kroeber during his fieldwork in Nazca (see Kroeber and Collier 1998: chap. 4). Although Kroeber (Kroeber and Collier 1998: 92) observed “almost rectangular” adobes at Cahuachi in association with early Nasca pottery, he states that “there is no indication that rectangular or parallelepipedal shapes were made at any phase of the Nazca culture.” I agree. On survey I saw rectangular adobes only in association with Middle Horizon and, possibly, later sites. Cylindrical adobes appear to be a rare Nasca type (see fig. 6.10). As Kroeber (Kroeber and Collier 1998: 92) astutely observed of Nasca adobes many decades ago, “the variety within the period of Nazca culture is very great . . . there is little uniformity. . . in most Nazca Period construction, formed adobes constitute only about a third of the wall volumes, the rest being mortar inserted in gobs or chunks.” I believe that this lack of standardization—in notable contrast to the situation at the Huacas del Sol and de la Luna in Moche (Hastings and Moseley 1975; Moseley 1975a)—is sociopolitically significant and shows a lack of overarching controlling direction in the construction of Cahuachi’s mounds.

Geoglyphs

Reindel and Isla (1999) make the fascinating argument that the Palpa geoglyphs have their origin in the abundant petroglyphs found in the upper Palpa Valley, most notably at Chichiktara, as seen in certain shared motifs such as stylized human figures with raylike lines on their heads in the manner of a crown. Also, other petroglyph motifs are typical of Paracas and Nasca 1 pottery. Reindel and Isla (1999: 195) suggest that

motifs were at first only created on the rock cliffs, mostly on places that were easily visible from the valley. Then it was discovered that one could also etch the same motifs into the surface of the desert floor. The early geoglyphs were, therefore (similar to the petroglyphs before them), placed on the valley slopes, where they were easily visible to the people living in the valley. [Then] larger glyphs came into existence that became more and more abstract and took on geometric shapes. Finally, the large lines and cleared fields/campos barridos were constructed on the extensive mesas where people could no longer easily observe them.

Reindel and Isla appear to say that from an original, highly culturally significant, visible, and integrated function in Nasca society of the Palpa Valley, the geoglyphs lost their meaning and became a culturally contentless activity resulting in mere works of abstract land art, therefore being physically removed from the settlements of their human makers. I am bothered by this aspect of Reindel and Isla's argument since it decontextualizes the geoglyphs from their makers. Given the amount of coordinated effort that went into making geoglyphs with such precision as well as the fact that the geoglyphs had symbolic content, I think we must continue to insist on their meaning and purpose to their makers, despite their proposed evolution from figural forms to geometric shapes.

Though not volumetric architecture, the geoglyphs—both on the Pampa and in the valleys—created a highly structured built environment. Massive knowledge was etched and stored on the Pampa, but physical elaboration of the individual geoglyphs was not a monumental task (see, e.g., Morrison 1987: 55, top photograph), even though the amplification of the designs to a huge scale was a significant achievement. Although technologically simple, the geoglyphs—whether biomorphic or lineal—are so precise that coordinated organization of labor is implied. While I assume this labor was not obtained by

coercion (and, indeed, the actual physical labor is not oppressive by any means), the precision of the geoglyphs strongly suggests that someone or some group was in charge of their elaboration.

The ancient Nascas' marking of vast desert expanses and barren hillsides with tracings of animal and geometric forms is the most visible example of the integration of Nasca social, political, and religious concepts about the proper functioning and organization of the cultural world. I have argued that the geoglyphs were myriad phenomena, important not just when executed but also in the process of elaboration. The tracing of the geoglyphs was, simultaneously, social production—the making and constituting of society (see Silverman 1990a, 1990b). Geoglyphs were part of the Nasca landscape, and they contributed to the creation of that landscape.

The Lack of Nasca Defensive Sites

Roark (1965) demonstrated that militaristic themes became popular in Nasca 6 pottery. Indeed, trophy heads as an independent iconographic theme account for 21.5 percent of Nasca 6 motifs (Roark 1965: 56), and hand-to-hand combat (e.g., de Laval 1986: 174; Verano 1995: fig. 11) is well represented on Late Nasca vessels. Nevertheless, evidence on the ground for Nasca concerns with warfare are quite limited. Nasca habitation sites do not appear to be located strategically for defense; they do not have fortifications; remains of instruments of aggression are not associated in a meaningful way with sites.² I see no evidence of population pressure exerting an effect on Nasca settlement patterns in the Ingenio—middle Grande region. I say this because in the upper Ingenio Valley, where pukios supplemented the seasonally charged river, entire tracts of fertile agricultural lands have few or no sites in some epochs of the Early Intermediate Period and because most of the lower half of the north side of the middle Ingenio Valley has little evidence of Nasca habitation. (I think this is only partially due to destruction through modern earthmoving activities; however, it may be due to concentration of population at Site 165.)

Brumfiel (1994: 11) writes that warfare “is archaeologically visible in a number of ways: physical evidence of violent death and the taking of war trophies, defensive works, large settlement size, ephemeral site occupation, defacement of public buildings and prestige goods, and depictions of warfare in art and inscriptions.” Even if we distinguish between warfare and raiding, as does Marcus (1992: 353, 355)—raiding as the burning of enemy vil-

lages, the slaughter of their defenders, the sacrifice of victims; warfare as an activity conducted by armies for the purpose of territorial annexation with resultant subjugation of enemy ethnic populations, to contest the throne, to obtain or avoid tribute payments, to obtain labor, and so on—there is still little evidence of Nasca bellic activity outside of ceramic iconography and trophy heads, taking decapitation as an act of aggression no matter how ritually contexted.

In contrast, Wilson (1988) provides compelling evidence of warfare in the Santa Valley. In his Early Horizon Cayhuamarca phase, for instance, there are twenty-one citadels representing 33 percent of all defensive sites located during Wilson's survey. Rock enclosure walls are massive; there are moats or ditches; there are baffled entrances; entrances in the main wall are few and narrow; there are ramparts and parapets; there are rock bulwark walls adjacent to the upslope side of ditches; sites are re-

mote from the irrigated valley floor (Wilson 1988: 104, 108). At least in the area I surveyed, the Nasca settlement pattern does not conform to this functionally determined pattern, and Schreiber (1999) and other investigators do not provide unambiguous evidence of Nasca warfare.

Notes

1. By way of comparison, Lewis (1999: 93, 95) demonstrates that the different societies comprising the Mississippian world shared an architectural grammar based on widely shared meanings: Mississippian towns characteristically have a plaza flanked by one or more mounds, and the plaza is the architecturally and symbolically dominant element of town design.

2. As depicted iconographically, these are spear throwers, wood spears, star-shaped clubs, slings with projectile stones, and knives/points (especially of obsidian).

Reconstruction of the Nasca Economy

Nasca archaeology is in its infancy. Symptomatic of this is the almost total absence of excavation at Nasca habitation sites. Nevertheless, information on the gendered and age-based division of labor and the composition and organization of households and larger groupings in Nasca society can be teased from other sources in the archaeological record. Thus, to some degree, it is possible to speak about the units of production and reproduction in Nasca society. In this chapter I try to reconstruct the Nasca economy on the basis of survey data, excavation data, and other sources of information such as iconographic representations. I am specifically concerned with how the human and nonhuman resources, goods, and services of the Nasca community were produced and consumed, managed and administered, distributed and exchanged.

Individuals, Families, Households

Ceramic iconography indicates that among the roles played by men in Nasca society were those of chief, warrior, trophy head taker, coca chewer, farmer, fisherman, impersonator of gods/masked ritual performer, musician,

and llama tender (Silverman and Proulx 2002: chap. 6). Women are shown leading llamas by ropes and carrying firewood using a tumpline, seated in voluptuous naked form, squatting in childbirth position, and chewing coca (Silverman and Proulx 2002: chap. 6).

Nasca men and women formed unions in which children were born. There were nuclear families such as the one represented on a modeled tablet published by Tello (1931) in which an adult male, an adult female, an adolescent-like girl, and two adolescent-like boys are depicted (see Silverman 1993a: 302, fig. 22.1). These families must have formed households.

Speaking of the contemporary situation in Peru, Mayer (1985: 47) defines the agriculturally productive “peasant” household as the locally aggregated group of families in a given place that exploits a common set of resources. These households have their physical manifestation in the village. Mayer (1985: 48) is concerned with the interaction between the household and village because “the household alone cannot by itself deal with all the technical and organizational problems of production in a given [production] zone; it needs the concurrence of other ‘supra-household’ . . . organization, which perforce must

be locally organized.” The household is the autonomous unit that produces and consumes crops, but it is the community, as an association of constituent households, that manages and administers the territory through the control it exercises over households (Mayer 1985: 51). The relationship between household and community is simultaneously symbiotic and conflict ridden (Mayer 1985: 52).

Mayer’s ethnographic perspective is important for archaeologists. Although with survey data alone we cannot be certain of the human or personnel composition of prehistoric households or the household’s physical manifestation in the archaeological record (which buildings and areas at a site correspond to a discrete household; see discussion in chapter 1), we can identify in the field their base of operation—the village. Follow-up excavations should reveal plausible household configurations and the similarities and differences among households at the site and among sites.

The Technology Underwriting Nasca Subsistence

The Early Horizon (Silverman 1994a) and later settlement patterns in the northern Río Grande de Nazca drainage indicate a reliance on riverwater irrigation for agriculture. In addition, in the upper Ingenio Valley there are pockets of land in which springs or pukios occur (see chapters 5–9). Based on settlement patterns and the configuration of riverine topography, a circumstantial argument can be made that each pukio-watered tract of land was a discrete territorial-hydrological unit in Nasca times. For the dry sections of the southern tributaries, Schreiber and Lancho Rojas (1995) have documented a correlation between settlement patterns and filtration galleries.

The ancient irrigation system based on maximum elevation canals and feeder canals has not been identified in the Nazca drainage (unlike the situation on the north coast; see Kosok 1965; Moseley and Deeds 1982; Ortloff 1995; Willey 1953: plates 46 top, 47 top, 50–54 *inter alia*), probably because the narrowness of arable tracts of land required their reutilization and/or destruction by later peoples. However, Urton (1990: 199) cites important ethnohistorical data from 1772 concerning a water dispute between hacienda owners in the middle Ingenio Valley and those living in the upper valley, with the former complaining that the latter’s use of water left little or none for the irrigation of their fields. Urton (1990: 199) argues that “the apportionment of irrigation water in the Ingenio Valley—and in the other valleys of the Río

Grande de Nazca—would have been as essential a part of the organization of pre-Hispanic agriculture in this arid land as it was in post-Hispanic times.”

Community rationing of irrigation water determines which crops can be grown in the various production zones (Mayer 1985: 61). Today, access to water is contingent upon participation in the *faenas* (obligatory work projects) that maintain the irrigation canals in working order (Mayer 1985: 61). The Nasca irrigation system required similar maintenance, and I can only assume that this requirement was organized in a *faena*-like system. I also assume that there was some water distribution decision-making entity and that water rationing was conditioned as much by the actual differential growth requirements of particular plants (including cotton, a nonedible but vital industrial product for community self-sufficiency) as by the pressure of interest groups within the community (see Mayer 1985: 61–63, 70–74). Certainly, the community of households must have been united to defend its rights to water and land *vis-à-vis* other communities just as traditional communities are today.

By Nasca 5 times, agriculture in the middle valleys of the southern tributaries was carried out on the basis of irrigation water obtained from the system of filtration galleries (see Schreiber and Lancho Rojas 1995). The remains of the ancient filtration galleries in the southern tributaries are quite well preserved, and many are still used by the local inhabitants. Urton (1990: 199) argues that “the implementation of *mit’a* produced both spatial and temporal divisions . . . [and] may have resulted in the partition of agricultural lands in strips, each defined by a major canal system irrigating the lands of a particular *ayllu*.” Similarly, I suggest that each filtration gallery and its feeder system created or reflected a distinct socioterritorial unit. The definition of sociopolitical territory and social identity on the basis of an irrigation system is well known for the coast and highlands in the late prehistoric period (see Netherly 1984; Rostworowski 1998; Sherbondy 1982 *inter alia*).

The alternative hypothesis would be that the entire irrigation system of a valley or several valleys functioned as a single geohydrological system. The multitrinary arrangement of the Río Grande de Nazca drainage suggests that this was not the case. My point, of course, harks back to the great debates in archaeology about the role of irrigation in the evolution of complex societies (see, e.g., Adams 1966: 66–76; Price 1971; Steward, ed. 1955; Wittfogel 1957) and the sociopolitical aspects of water supply and control in the present (see, e.g., Fernea 1970; Hunt and Hunt 1974; Lees 1973).

In addition to irrigation, another aspect of farming

technology was the organization of the labor force. To judge from the Nasca settlement pattern, farmers lived in immediate proximity to their fields. Based on ceramic iconography, Proulx (ms.) argues that Nasca farmers worked in groups. Ethnohistorically known practice (e.g., Guaman Poma de Ayala 1980: numbered illustrations 1132, 1136, 1138, 1144, 1147, 1153, 1156, 1162, 1165) suggests that women would have been involved in this field work.

Mayer (1985: 64) argues that, ultimately, communal controls over agricultural production “also create the conditions for greater and more controlled labor exactions . . . ensuring that the kuraka’s . . . [or] huaca’s claims on land and labor get assigned and worked first (in the sense that these have priority) in a given production zone, before individual commoners are allowed to work their own plots.” Similarly, Fonseca Martel (1981) argues that the principles that organize production are also those that organize the social organization of the groups that participate in the productive work. This organization should be inferable, to some degree, from the archaeological record in terms of patterns of space and material culture.

Among the portable tools for agriculture that can be identified are pointed wooden digging sticks (see, e.g., Sawyer 1979: fig. 17, right; Townsend 1985: fig. 6). Ground stone tools for food preparation were observed at various sites (CD: table 15.1) but not in the quantity and wide distribution characteristic of the LIP sites. In this regard, it is important to bear in mind that these grinding slabs, rockers or handstones, mortars, and pestles are still used today in traditional homes. Archaeological sites are an accessible source of the valued basic tools with which to prepare a variety of foods in the contemporary Peruvian diet. Therefore, between the effects of time and recent appropriation, the absence of these ground stones on site surfaces is not necessarily statistically or functionally significant.

The Nasca Diet

As portrayed in iconography and as recovered in excavated remains (see Isla 1992; Silverman 1993a: chap. 20; Valdez 1994: 677), Nasca people ate a wide range of plant foods, and agricultural products constituted the bulk of the diet. High carbohydrate seed crops included *Zea mays*/maize, *Arachis hypogaea*/peanut, *Canavalia ensiformis*/jack bean, *Cucurbita*/squash, *Phaseolus lunatus*/lima bean, and *Phaseolus vulgaris*/kidney bean. High carbohydrate root crops included *Canna edulis*/achira, *Ipo-*

moea/sweet potato, *Manihot utilissima*/manioc, *Pachyrhizus tuberosus*/jicama, *Polymnia sonchifolia*/yacon, and *Solanum*/potato. Fruit included *Capsicum frutescens*/aji, *Inga feuillei*/paca, *Lucuma obovata*/lúcuma, *Persea americana*/avocado, *Prosopis chilensis*/huarango pod, *Psidium guajava*/guava, and *Solanum muricatum*/pepino.

Although maize is not a dominant crop in Nasca ceramic iconography, as excavated material at Cahuachi it exceeded the other edible plant remains, perhaps because of its better preservation in the archaeological record (the cob is not eaten) and perhaps because Cahuachi was a ceremonial center, and the maize was used in the preparation of chicha and cancha (popcorn) (see data in Silverman 1993a: chap. 20). Small prehispanic maize cobs were observed on the surface of several of the Nasca sites or sites with Nasca occupation recorded during survey (Sites 81C, 176, 189, 502A, 515A). Isla (1992: 150) says that maize was the dominant Nasca food crop, but the contention lacks quantified data.

Desiccated maize stalks (chala) were a key element in the construction fills of Nasca ceremonial architecture (see Kroeber and Collier 1998: 42, 62; Silverman 1993a: figs. 4.7, 4.8, 5.15, 5.28). Obviously, maize was not cultivated solely for use in construction. Therefore, its abundant presence in architecture must indicate its common consumption. At Cahuachi I also recovered a cache of 2 kilograms of maize in the fill beneath a wall in an architectural area adjacent to the lower portion of the Unit 19 mound (“Feature 50,” see Silverman 1993a: chap. 20). Nine maize cobs had been carefully placed in the Nasca 6 mummy bundle excavated by Isla (1992: 141) in Tomb 2 at Usaca 2.

In addition to agricultural products, the Nasca diet was enriched by the consumption of particular animal and marine resources. Llama was a key animal resource for the ancient Nasca. There are painted scenes of Nasca men and women leading tethered (i.e., domesticated) llamas (e.g., Carmichael 1988: plate 26; Purin 1990: fig. 149). Llamas were used for sacrifice and feasting at Cahuachi (e.g., Orefici 1993; Silverman 1993a: 199, 202, 209, 301, 304, 305; Strong 1957: 31; Valdez 1988, 1994) and were consumed at habitation sites (Isla 1992: 150). Llamas are frequent enough in various Nasca contexts, and specifically in age and sex ratios of domestication, to imply local husbandry, despite the seemingly inhospitable desert ecology for doing so (Valdez 1988, 1994: 677; see also Orefici 1993: 43, 92, who identifies both llama and alpaca). In this regard, the lomas may have been important for pasturage. In addition, guanaco may have been hunted in the lomas and/or Pampa Galeras, to judge from the ceramic depictions of hunters with ob-

sidian-tipped spears and using spear throwers to attack camelids (see, e.g., Donnan 1992: fig. 93; Eisleb 1977: 207; Kroeber and Collier 1998: figs. 259, 272).

The guinea pig also was an important animal resource in ancient Nasca society. I recovered a sacrificial cache at Cahuachi (Silverman 1993a: 168), and Isla (1992: 150) reports guinea pigs in habitation contexts at Usaca. On survey I observed guinea pig excrement in an area of recent looting at Site 557 that may correspond to a Nasca habitation site with in situ tombs. Guinea pig excrement also was observed at Site 327 in a layer of refuse also containing chala, maize, human excrement, plainware, and Nasca 3 pottery. Excavations in domestic contexts should reveal the abundant presence of guinea pig.

Early Nasca ceramic iconography places significant emphasis on naturalistic maritime motifs (e.g., Eisleb 1977: figs. 24–30), and fishermen are shown catching fish in their nets (e.g., Lapiner 1976: fig. 511). Actual cotton nets are known from excavation at Cahuachi (O’Neale 1937: 202; Orefici 1993: fig. 122 *inter alia*; Silverman 1993a: 272, fig. 18.22), and various fish and edible molluscan species have been recovered in excavations at Cahuachi (Rodríguez de Sandweiss 1993) and at habitation sites. In his excavations at Usaca, Isla (1992: 150) recovered abundant maritime remains: *Mulina edulis*, *Choromytilus chorus*, *Aulacomya ater*, *Mesodesma donacium*, *Tegula atra*, *Prisogaster niger*, *Fissurella crassa*, and *Stronglyocentrotus albus* erizo. Isla also recovered freshwater *Crypiops carmentharius*/camarón del río, which he interprets as implying the existence of more riverwater at this time. *Choromytilus* shell was observed on the surface of Site 161 at the upper end of the survey area, although more kinds of shell are observed at the lower end of the survey area (CD: table 15.2). Notwithstanding Nasca interest in the sea, there is no evidence that the ancient Nasca were a seafaring people, and, as noted in chapter 13, there were no permanent Nasca littoral settlements.

Nonsubsistence Agriculture

Cotton was a major industrial product in ancient Nasca society. Phipps (1989: 170) concluded that cotton was the fiber composing the majority of Nasca textiles at Cahuachi. Cotton could have been grown anywhere in the valleys occupied by the ancient Nasca.

Gourds were locally available. They were important as both utilitarian objects and a major vehicle for iconographic expression (see, e.g., de Laval 1986: 182, center; Kroeber and Collier 1998: fig. 70; Silverman 1993a: figs. 19.20–19.22).

Coca leaf should have been locally available in the chaupiyunga areas (500–1,000 meters above sea level) of the various tributaries in accordance with Dillehay’s (1979) data from the Chillón Valley and Rostworowski’s (1989a, b) various ethnohistorical analyses of coastal coca production. Coca is rare in the Nasca archaeological record, although there are ceramic depictions of men and women chewing coca. Coca leaves adhered to a loose adobe on the badly looted surface of Terrace IV at Site 515 in the middle Grande (fig. 15.1). Ubbelohde-Doering (1958) discovered coca leaves in his Nasca 8/Loro tomb at Cahuachi. Orefici (1993: color fig. 34) identified a textile artifact as a coca bag (*chuspa*), which he dates to Nasca 8/Loro, making it contemporary with Ubbelohde-Doering’s coca leaves at Cahuachi.

The hallucinogenic San Pedro cactus was a wild plant of major ritual significance to the ancient Nasca, to judge from its iconographic depiction (e.g., Carmichael 1988: plate 27 bottom; Lothrop 1964: 203). Its preparation in pots may be detectable by residue analysis.

Pottery Manufacture and the Issue of Craft Specialization

In his discussion of inequality in and among households, Blanton (1995: 112) says that “one dimension of emergent inequality resides in the monopolistic control, by elders, of prestige goods required for the social reproduction of junior household members.” Similarly, Stein (1998: 21) observes that an “accumulating body of evidence suggests that elites in chiefdoms and states attempt whenever possible to maintain control over the production of prestige or luxury goods . . . since these are ‘politically charged commodities’ . . . essential for the social reproduction of elites.” Whenever objects bear the iconography of power and symbolize that power, elites may seek to control production by their proximity, resulting in production centers that are in or near the centers of corporate authority.

Nasca pottery conforms to the definition of a potential prestige or luxury good by virtue of the symbolic messages painted on it. Yet fine Nasca pottery (including panpipes) was widely available at Nasca habitation sites (in addition to its ubiquitous presence at cemeteries and civic-ceremonial sites). Indeed, on survey the identification of Nasca habitation sites was possible specifically because of the presence of Nasca fineware on the surfaces of these ordinary settlements; not all of this surface pottery is the result of (looted) tombs in the habitation zones. This distribution supports Carmichael’s (1988)



15.1. Coca leaves adhering to an adobe at Site 515 in the middle Grande Valley.

conclusion, based on mortuary patterns, that pottery was not restricted to particular status groups. It also suggests pottery's use in local venues for ritual. Blanton (1995: 113) provides possible insight into the Nasca situation: "household political processes . . . are comprehended at a deeper level by reference to the behavioral and material dimension of symbolic expression. Symbols . . . are significant because they occur in 'ritualized, that is, formalized communication' . . . I [Blanton] include as formalized contexts for symbolic expression both household ritual and habitus, the latter referring to a formalization of everyday activities . . . It is precisely in ritual and habitus that an order of household inequality is made to appear powerful and holy." The existence of symbolically charged materials (pottery) in Nasca domestic contexts could have acted processually and recursively to maintain the relationship between (relatively) distant ritual and supracomunal sacred settings and the dynamic, localized social order. My statement is congruent with Stein's (1998: 24) argument that local production and exchange may be quite important in structuring the political economy.

Political economy refers to the system that creates and mobilizes the goods and services that elites use and manipulate. The political economy is an interdependent relationship between economic resources and the politically contextualized strategic and strategized concentration, production, and distribution of these economic resources. The political economy can be conceived and operationalized as material spatial practices: the social production of spaces and regions; the changing spatial divisions of labor; the means by which spaces are appropriated, controlled, and regulated (Watts 1992: 118).

Full-time craft and economic specialization have long been regarded as hallmarks of complex societies (e.g., Childe 1974). Specialized craft production implicates the political economy in terms of the degree of elite involvement in or control over craft production and attached versus independent craft specialists. Stein (1998: 19) emphasizes that we must consider "the intended functions of the goods being produced, the raw materials used to produce them, the organization context of production, the structure of social demand for these goods, the organization of the exchange systems through which these goods circulate, and patterns of consumption." Costin (1998: 3) analyzes craft specialization from a similar perspective.

Crafting and craft objects intersect with all cultural domains: economic, social, political, and ritual. Craft goods are social objects that assume an importance beyond household maintenance and reproduction. They signify and legitimize group membership and social roles, and become reserves of wealth, storing intrinsically valuable materials and the labor invested in their manufacture. Specialized craft producers are actors involved in the creation and maintenance of social networks, wealth and social legitimacy. Artisans and consumers must accept, create or negotiate the social legitimacy of production and the conditions of production and distribution, usually defined in terms of social identity. The nature of that process defines the organization of production and the social relations of production that characterize the relationships between producers and consumers.

Spielmann (1998: 158) considers whether the social identities of craft specialists and ritual practitioners were coterminous given the ideological and spiritual power of the goods produced. She presents three scenarios for the production of complex, ritually charged crafts in middle-range societies based on ethnographic analogy and independent archaeological interpretation.

[Case 1.] In cases where ritual performance is relatively open skilled independent craft specialists are to be expected. . . . Items requiring little skill may even be made in most households, rather than by craft specialists. There should be little control over the production of these esoteric items.

[Case 2.] Where ritual knowledge and performance are paramount in achieving and maintaining status, ritual craft specialists are likely to be the ritual practitioners, thus greatly limiting the ability of any uninitiated to perform ceremonies. Only ritual practitioners would have both the ceremonial knowledge and the material goods necessary for ritual performance.

[Case 3.] Where ritual knowledge and performance are one of several means of achieving and maintaining status, ritual craft specialists may or may not be the ritual practitioners. Skilled artisans, however, may be embedded in the contexts which ritual practitioners control (households, ritual societies), thus allowing for control by the ritual practitioner over access to goods necessary for ritual performance and building prestige.

Early Nasca pottery production can be considered from these perspectives. Thus far there is no firm evidence to indicate that Nasca potters were full-time specialists rather than part-time artists.¹ Indeed, the case of contemporary Canelos Quichua pottery production in Ecuador indicates that technologically superb and iconographically complex pottery can be made in the absence of full-time specialization (Reeve 1985; Silverman 1993a: chap. 22; Whitten and Whitten 1988). At present it remains to be determined *where* the most iconographically complex Nasca pottery was being manufactured, by *whom*, *who* was in control of production, and *how* pottery was distributed.

Nasca society's cosmology, sacred dogma, and worldview were expressed on its fine painted pottery. Nasca pottery reached an aesthetic and technological peak in EIP 3, corresponding to the apogee of Cahuachi. I have suggested that the rise of Cahuachi led to an increase in ceramic production, corresponding to an accelerated demand for pottery for use in ritual and ceremony,² in-

cluding the deliberate removal of pottery from circulation (Silverman 1993a: 303–304; see also Arnold 1985: 159, 162). The abundance of decorated bowls, dishes, cups, and double-spout-and-bridge bottles at Cahuachi and in Nasca society in general probably indicates food and drink consumption (feasting). In addition, some fine pottery may have been produced specifically for burial, although most grave pottery shows evidence of having been used. Interestingly, although Nasca 3 pottery is abundant, frequent repair holes in fine pottery (see, e.g., Silverman 1993a: 260–261, fig. 17.5) suggest that pots had value in Nasca society in terms of their symbolic content, prestige, and life histories (see Silverman 1993a: 335). Also, pottery may have been conserved because of the actual economic cost of fuel (wood, llama dung) needed for firing in this desert region. The open distribution of early Nasca fine pottery in Ingenio–middle Grande could well support Spielmann's first case.

Nasca ceramic iconography can be so complex and beautifully painted, and the technical quality of the pottery is so high, it seems reasonable to think that only a knowledgeable as well as talented artist could produce it, including obtaining and mixing the slip pigments. This might suggest a situation of "priest-potters" at Cahuachi as per Spielmann's second case. By comparison, Sawyer (1997: 72) has identified Nasca textile samplers that, he says, indicate the organization of fine textile work as well as status differences in Nasca society. He argues that strong similarities in image renderings across samplers indicate that "Nasca iconography was under the strict control of the religious hierarchy."

Vaughn and Neff's (2000) neutron activation study of potsherds from an ordinary Nasca 3–4 domestic site in Tierras Blancas indicates that painted vessels form a single group, suggesting a single place of manufacture (i.e., Cahuachi), whereas there is variability in the chemical composition of plainware. But not every village need have made fine pottery. Vaughn and Neff (2000: 88) correctly note that I have reported evidence of possible ceramic manufacture at Cahuachi. This evidence consists of fragments of red pigment and pigment-stained rocks, spatulas, and fine-haired objects that could be paintbrushes (Orefici 1993: 100, figs. 118, 119; Silverman 1993a: 277, fig. 19.9 *inter alia*; compare to the pottery-painting tools found at Maymi; see Anders et al. 1998: 11). Petersen (1980: 12) reports that in 1970 he discovered alongside a temple at Cahuachi "a quantity of earthy, dark and brick red colors; ochers that evidently were used for decorating the pottery. Some ash stains and fragments of vegetable charcoal indicated, perhaps, the places where pot-

tery was fired." A cache of a fine maroon red mineral powder is present in Strong's collections at Columbia University. Kroeber (Kroeber and Collier 1998: 259) also has reported a lump of gypsum useful for polishing, sandstone useful as an abrasive, hematite pigment, and a quartz pebble with hematite adhering to one face. But not all fine early Nasca pottery was necessarily made at Cahuachi.

The Nasca 3 modeled scene, discussed by Tello (1931), depicts what appears to be a family going to or coming from some possibly special place, to judge from the individuals' fine clothing. The father plays a panpipe, and the mother carries two more, one in each hand. Parrots perch on the shoulders of the mother and daughter. The daughter carries a double-spout-and-bridge bottle. I have suggested that the family is going to Cahuachi or another Nasca ceremonial center and that they are bringing parrots to sacrifice, panpipes to play, and a fancy ceramic bottle to sacrifice, exchange, or give to the religious practitioners of early Nasca society (Silverman 1993a: 302). This scenario can be accommodated to Vaughn and Neff's (2000) argument (if they are correct, and the issue is not one of the clay beds selected for the raw material having the same compositional signature throughout the drainage), since pottery made at Cahuachi may have had a long, lubricating social life and circulated widely in the drainage after initial acquisition. Given the demonstrated demand for and increased production of highly iconographic pottery in Nasca 3 times associated with the climax of the Nasca religious cult at Cahuachi (see Silverman 1993a: 302–304, 335), I would not be surprised if evidence of significant pottery production were one day discovered at Cahuachi and at other ceremonial centers as well.

The Nasca data might approximate Spielmann's third case (skilled artisans may be embedded in households and ritual societies, "thus allowing for control by the ritual practitioner over access to goods necessary for ritual performance and building prestige") rather than the second ("ritual craft specialists are likely to be the ritual practitioners, thus greatly limiting the ability of any uninitiated to perform ceremonies"). In light of the intensity of Giuseppe Orefici's excavations at Cahuachi and, more recently, the broad areal surveys conducted in the Nasca region, it is becoming increasingly likely that full-time Nasca elite pottery workshops did not exist or were extremely rare, since evidence of them has not been presented (compare with those known for Wari and Mochica: Anders et al. 1998; Pozzi-Escot 1991; Russell, Leonard, and Briceño Rosario 1994).

Vaughn and Neff's (2000) data are very exciting, but their reconstruction is troubling in that fineware dating to Cahuachi's apogee (Nasca 3) and postapogee (Nasca 4) has the same composition. Their scenario leaves unresolved the continued technological excellence and iconographic complexity of Nasca pottery following the decline of Cahuachi when there is no central ritual place in the Río Grande de Nazca drainage.³ It is imperative now to characterize Nasca fineware of all phases and to see how those compositions compare to Vaughn and Neff's sample. Vaughn and Neff have directed Nasca studies in an important new direction.

Is the problem of the locus Nasca pottery production one of how to recognize craft specialization in the archaeological record? Stein (1998: 20) suggests that specialized production facilities, concentrated or differential distribution of production debris, and homogeneous attributes of the products (such as standardized vessel morphology, mold marks, chemical composition of clay) themselves are evidence of craft specialization. If most Nasca production of finewares took place in the valley floor at the clay source and adjacent to the water and fuel necessary for production (see Arnold 1985: 20), then these loci are probably unrecoverable today due to the intervening millennia of alluvial deposition.

Potter's plates (e.g., Orefici 1993: fig. 117) found on survey suggest pottery manufacture on the local level (though those plates could have been used only for plainware, following the heterogeneous plainware clay composition documented by Vaughn and Neff [2000]), even in the absence of other industrial markers such as wasters, calcined areas, and production tools. I do not know how plainware was constructed. I always assumed it was hand coiled without a potter's plate, but I could be wrong. I recovered fragments of potter's plates on the surfaces of seven Nasca sites in the Ingenio and middle Grande Valleys: Site 32 (habitation), Site 43 (habitation: the potter's plate is specifically from within a large fieldstone structure), Site 250 (habitation), Site 327 (habitation), Site 448 (cemetery), Site 459 (a Nasca occupation underlying a Wari planned architectural complex), and Site 502 (a possible potter's house and grave; see chapter 6). Isla (1992: 143) states that "one of the most important activities carried out [at Usaca 1] was pottery making." Here he recovered two potter's plates. He observed that the interior walls of open vessels are slipped an orange color, whereas the usual Nasca color is red. Isla (1992: 147) interpreted this as an "ethnic difference" in pottery production. Thus, while pottery production may have been occurring at Cahuachi, Isla would be arguing that Nasca

people (also) were making pottery in their villages on an individual basis. This is perfectly reasonable to me.

Panpipe Technology and the Identification of Communities

The manufacture of ceramic panpipes constitutes a special dimension of pottery production. Dawson (1964: 109) argued that straight tubes of uniform dimensions were produced by the technique of slip casting and that this permitted control of pitch and production of instruments in matched sets. However, using experimental replication, microscopic inspection, and thin section analysis, Kvietok (ms.) rejected Dawson's conclusion and proposed, instead, that panpipes were manufactured by extraordinarily skilled hand modeling over a solid template. Bolaños (1988: 107) argued that the ceramicists who produced Nasca panpipes were so adept that these were not the musicians themselves but a different group of specialists in Nasca society. This may or may not be the case.

Joerg Haerberli (1979) studied twelve panpipes composed of six to ten tubes and dating Nasca 2 through Nasca 7. Four of the panpipes in his sample were complex (segmented), and the others were simple (straight sided). Haerberli found that the acoustical properties of segmented tubes differed from straight-sided ones. Also, the length of tube was chosen to get a close fit to the desired frequency. Fine tuning was done by the shaping of the blowhole. Haerberli concluded that over the course of many centuries there existed a scale based on a common basic frequency interval of 43 hertz or multiples thereof. Pitch was standardized, and there was some emerging structure for tuning panpipes. For Haerberli the absence of a system of standardized keytones indicates that "different musicians and/or communities had their instruments tuned to their scales." It is important to indicate that Vaughn and Neff (2000) found that early Nasca panpipes at Marcaya had the same composition as painted vessels, which for them indicates that panpipes, too, were being made at Cahuachi, and, of course, panpipes are ubiquitous at Cahuachi. Later Nasca panpipes need to be tested for comparison.

Textile Production

Strong (1957: 28; see also Silverman 1993a: 52, 64) may have excavated a specialized Nasca 2 textile facility, per-

haps of craftspeople attached to the ceremonial center. He found "numerous cloth fringes and other unworn fragments from beautifully woven and colored embroideries as well as other textile types. . . . fine pieces were so abundant . . . that it seems possible that these structures [a series of heavy walls, perhaps used as walks, and a series of well-constructed, nicely finished wattle-and-daub walls and floors] were used particularly by weavers."

Other evidence of textile production has been discovered at Cahuachi, though none as compelling as Strong's. I recovered scores of three-dimensional textile figures that would have been attached to bands and sewn onto base cloths (Silverman 1993a: figs. 18.4, 18.6–18.15), possible needles (Silverman 1993a: fig. 19.12), a wood comb (Silverman 1993a: fig. 19.13; see also Orefici 1993: color fig. 32), and other weaving implements (Silverman 1993a: fig. 19.15). Orefici (1993: fig. 129) speculated that an offering of magnesium sulphate in a Nasca pot had an original use as a mordant for textile dyes. He illustrated a comb for textile production.

Presumably, production of ordinary cloth for personal use occurred at habitation sites. Camelid wool was an important material resource in ancient Nasca society. It was dyed and used in the making of Nasca textiles (O'Neale 1937). Its abundance surely correlates to the availability of the raw material. O'Neale's (1937: 205) study of yarns from 163 textile specimens excavated by Kroeber at Cahuachi revealed 31 percent all cotton, 36 percent all wool, and 33 percent cotton-wool combinations. In her detailed study of the hundreds of textile fragments recovered by Strong at Cahuachi, Phipps (1989: app. VII) identified ninety-five fragments with generic camelid hair and two specifically with alpaca hair. Textiles were made of spun threads of cotton and of camelid wool. On survey, I observed three ceramic spindle whorls (reutilized sherds with a central hole) at two Nasca habitation sites (Sites 91, 127); excavation probably would reveal their presence at more habitation sites. Spindle whorls also were present on the looted surfaces of cemeteries at Sites 227A, 280A, and 341 as well as the Site 376B mound. One bone artifact at Site 505C may have been used in textile production.

Color in Nasca textiles was due to naturally occurring differences of color pigmentation in cotton (Vreeland 1999) and wool (with colors ranging from white to beige to brown to black) as well as to the dyeing of wool fiber. With regard to dyes, Phipps (1989: 176, and see her full discussion, 176–194) has observed that "the use of pigments on textiles is perhaps the earliest type of application of color. From the earliest sites of textile-producing

people, cotton and plant-fiber . . . fabrics and animal skins have been colored with earth, which [is] chemically oxides, hydroxides and carbonates of copper, iron and manganese. These pigments are [also] used, usually in combination with a binding medium, as surface-applied colorants for ceramics as well as application to wall-painting, wood, gourds and other such media.” The issue here is the source of these different coloring agents, for some are locally available (e.g., tannins for browns, cochineal insects on cactus for carmine red, indigo for violet blue), whereas others required travel out of the local area and even the larger region. Phipps (1989: 180, 225) identified cinnabar (mercuric sulfide ore) as a colorant on Nasca textiles from Cahuachi. She was struck by the fact that mineralogical maps of Peru today indicate the headwaters of the Pisco River in Huancavelica as the only major source of cinnabar. The coveted color may have been moving down the Pisco Valley, across the foothills to the upper Ica Valley, and from there being distributed by trade and exchange mechanisms as yet undetermined. In addition, purple was obtained from the excretion of shellfish such as *Perumytilus purpuratus* and *Concholepas concholepas* (known at Cahuachi; see Rodríguez de Sandweiss in Silverman 1993a: chap. 21). Lapis lazuli or chrysocolla could have been ground to create blue pigments. Phipps (1989: 178) reported that at San Nicolas Bay the iron oxide mineral deposits are striped red, orange, and yellow. She speculated that these minerals could have been used in suspension to create the slips for painting pottery. Clearly, pigments and dyes were valued in Nasca society. Indeed, Baxandall (1988: 11–14) gives us a European example of the importance color may have in the social hierarchy of a society. He notes that in early-fifteenth-century Italian oil paintings, precious pigments such as ultramarine (ground lapis lazuli) were prominent and imparted value to the work as sheer opulence of consumption of rare materials.

Metallurgy

I did not recover any metal pieces on the surface of Nasca sites. But Nasca metallurgy is well known in the literature, although rare (see Carmichael 1988: 304–305, 498; Kroeber and Collier 1998: 51). Nasca gold artifacts include forehead ornaments, mouth masks, plumes, plaques, and bracelets. Nasca spear throwers with copper bands and bits of copper are known (Carmichael 1988: 498–499). Gold and copper are available in the drainage, though laborious to extract under artisanal conditions.

Exotic Goods

The ancient Nasca were able to satisfy their basic necessities in their immediate locales. Other desired goods implicated complex intersocietal mechanisms and labor mobilizations (obtention of obsidian, *Spondylus*, particular colorants for Nasca pottery and textiles, etc.), and let’s bear in mind the role of the llama as a pack animal.

Obsidian

Obsidian is one of the two quintessential markers of long-distance activity in the Andes, the other being *Spondylus* (see below). Obsidian has a long history of occurrence on the south coast of Peru. It is present in the Nazca Valley back to the Archaic Period (see Isla 1990: 75). Although unanalyzed, Isla’s obsidian from “La Esmeralda” (a locus at what would become Cahuachi) is likely to come from Quispisisa, given Burger and Asaro’s (1977: 303–304) indication that Quispisisa was the dominant source of obsidian for the south coast.⁴ Obsidian from Quispisisa was used at San Nicolas Bay III, a possibly late Preceramic site (Strong 1957: 8–10, table 1; see comments on the site’s dating by Edward Lanning in Vescelius 1963: 44; see also Engel 1963: 10 and Vescelius 1963 for comments on their two explorations at this site). Quispisisa obsidian is also found in the late Preceramic occupations at Boca del Río (Ica), Otuma (Paracas), and Asia (Asia/Omas Valley), in the Initial Period occupation at Erizo (Ica), and at various Early Horizon Paracas sites in Ica (Burger and Asaro 1977: table 3).

Obsidian appears to be present at Nasca sites of all phases and functions and throughout the Río Grande de Nazca drainage (Burger and Asaro 1977: 307–308; Silverman 1993a: 160, fig. 19.26, table 19.3; Valdez 1994: 677); it is also present at Nasca sites in the Ica Valley (Burger and Asaro 1977: 308). In Ingenio, obsidian was recorded on the surface of eighty-one Nasca sites or sites with Nasca occupations (CD: table 15.3). Sites of all Nasca phases had obsidian. There is greater surface density of obsidian at upper valley sites (Sites 21, 39, 55B, 160, 163) than lower down, but not all upper valley sites have obsidian on their surfaces, and when it does occur it may have much lighter density. There appears to be a significant drop-off in obsidian density below Site 55 at 675 meters above sea level. When present, obsidian density at sites in the middle and lower Ingenio Valley and in the middle Grande is very scarce. Most of the sites at which obsidian is present on the surface are habitation sites. However, four sites are geoglyphs (Sites 109, 305, 346, 349); three are ceme-

teries (Sites 341, 358, 359); two have cemetery, geoglyph, and civic-ceremonial aspects (Sites 81, 287); and the function of eleven sites with surface obsidian is unknown (Sites 5, 14, 61, 138, 164, 184, 189, 202, 273, 430, 453). I do not know why obsidian is present outside habitation contexts.

Overall, the distribution data discussed above indicate that Nasca people had long-term, long-distance procurement strategies for the obtention of obsidian. The obsidian recorded on my survey consisted of large and small flakes, projectile points, the occasional knife and scraper, nuclei, and worked pieces whose function was not determined. These artifacts represent all stages in the lithic production process, from core and debitage to finished products and reuse. In addition, I tentatively interpret the pattern of material remains at Site 79A1 (see chapter 9) as a lithic workshop; at this site there appears to have been a preference for reddish brown obsidian (for whatever reason).

Nasca's obsidian appears to come from the Quispisisa source, now known to be in Huanca Sancos, Ayacucho, in the puna production zone at 3,780 meters above sea level, above a river tributary draining into the Pampas River (Burger and Glascock 2000). This confirmed location would have made obsidian much more accessible than the incorrect Huancavelica source (see historical discussion in Burger and Glascock 2000) for Nasca people, especially those living in Palpa and Ingenio. The route to the true Quispisisa source from Ingenio involved crossing only some 15 kilometers at or slightly above 4,000 meters above sea level, and only 2 kilometers separate the uppermost Ingenio River from a tributary that descends immediately into the Huanca Sancos Valley. Different Nasca societies may have developed their own routes for the obtention of obsidian.

Identifying the routes by which coastal people may have arrived at the Quispisisa source, however, leaves unanswered the important question of protocol governing exploitation of the source. Who controlled this tremendously valued resource? Did different communities exploit it directly, or did they rely on intermediaries? How did Quispisisa obsidian arrive at Nasca sites (by what route, who organized the trip, who effected the trip, etc.)? How was Quispisisa obsidian distributed within the different Nasca societies once obtained? Even before its true location was determined, Burger and Asaro (1977: 315–318) had offered several models of obsidian obtention and distribution that can now be tested, taking into account the true location of the Quispisisa source and the cultural panorama of Ayacucho at the time under consideration. For us, this means attention to

the Early Intermediate Period. Insofar as I know, the Nasca–contemporary Huarpa people of Ayacucho lived north of the Pampas River, whereas Huanca Sancos and the Quispisisa source are south of it. The pre-Wari occupation south of the Pampas River is unknown (see Valdez and Vivanco 1994).

Perhaps the area in which the Quispisisa source is located was unoccupied and a “free zone,” a place where all interested parties could obtain the resource, since supply sufficed demand under precolumbian technology and population levels (to this day there is abundant obsidian at the source). If access to the Quispisisa source was unrestricted and possibly uncontrolled, each society would have made its own arrangements to either get obsidian directly or engage in exchange with those who did.

Clearly, obsidian was not uncommon in Nasca times. Furthermore, Nasca people appear to have been deliberately choosing obsidian from the Quispisisa source in Huanca Sancos over the Pampas source of obsidian at Jampatilla in the Carhuarazo region. With the identification of the Huanca Sancos source of Quispisisa obsidian, the Nasca decision becomes topographically understandable, for the Pampas source is more distant and more difficult of access than Huanca Sancos, notwithstanding the Nasca sherds present in the Carhuarazo Valley (Schreiber 1992: 139, 227). There is much more to learn about obsidian in Nasca as, indeed, in all other precolumbian societies.

Spondylus

Spondylus, the thorny oyster from the Gulf of Guayaquil so coveted by the ancient Peruvians (see Paulsen 1974), is rare in the Nasca archaeological record, though it is iconographically prominent. On survey I recovered pieces of *Spondylus* shell on the surface of eight sites whose main occupation is Nasca or on whose surfaces there is Nasca pottery (see CD: table 15.2). These sites are habitation sites, cemeteries, civic-ceremonial sites, and a lithic workshop. There is so little *Spondylus*—and gold—overall in Nasca society that it is inappropriate to consider its systematic monopolization and ideologically materializing and enhancing use by elite agents, as can well be argued for the north coast Mochica, Chimú, and Sicán societies.

Notes

1. Arnold (1985: 90) explicitly suggests that many of the Peruvian coastal valleys offered “ideal conditions for the development of the full-time, year-round ceramic specialization that

was responsible for such complex ceramic traditions as Nazca [*sic*], Paracas, Moche and Chimu.”

2. Sawyer (1997: 76) argued that the complex Nasca 1–2 needlework projects were so labor intensive that they overwhelmed the capacity of embroidery workshops. He suggested that this led to the abandonment of really fine textile production and a switch to the ceramic medium.

3. I note the non sequitur in Vaughn and Neff’s (2000: 87–88) statement that I “once argued that ceramic production probably took place at Cahuachi, but since then she has argued

against a permanent residence at the site.” The first clause has nothing to do with the second. I have consistently argued against a large permanent occupation at the site, as Vaughn and Neff note earlier in their article. Pottery production could have occurred at Cahuachi during the temporary visits to the site I have posited occurred in the context of pilgrimage.

4. Dominant but not exclusive: Burger et al. (1998: 228–230) report that Hacha used Jampatilla obsidian (the “Pampas” obsidian) as well as obsidian from Quispisisa.

Theorizing Nasca Society

Various scholars have labeled the Nasca archaeological culture of the south coast of Peru a chiefdom or state—among other terms used—based on their interpretation of the geographical distribution of its exquisite pottery, the assumption of craft specialization for pottery manufacture (including panpipes), complex iconography and access to it, size and preeminence of Cahuachi (plus the site's former interpretation as an urban settlement), burial patterns, absence of artifacts of administration such as quipus and ration bowls, and so on (see discussion in Silverman 1993a: chap. 23). But, as I complained at the conclusion of *Cahuachi in the Ancient Nasca World* (Silverman 1993a), these neo-evolutionary labels are uninteresting, counterproductive, and inaccurate. Issues and processes of inequality, rather than neo-evolutionary stages of cultural development, are the framework that should guide scholars of complex societies. The concept of inequality permits comparison among societies of varying complexity and configuration (see, e.g., Crumley 1979; Fallers 1973; McGuire and Paynter 1991; Price and Feinman 1995) as well as facilitating the investigation of increasing organizational complexity over time.

Agency theory has come to figure prominently in the current literature treating inequality. It is the rage in American archaeology. From Mississippian to Mesoamerica to Mochica, we are abuzz with agents who act with purpose and mobilize the resources necessary to accomplish their intentions (see, e.g., Blanton et al. 1996; DeMarrais, Castillo, and Earle 1996; Emerson 1997; Saitta 1994; Spencer 1993 *inter alia*). The fundamental point about agency theory is that social structures do not have agency. There are not social structures *and* human beings but only social structures *of* human beings, who, by their very essence, are social beings. Only human beings can exercise agency. Agents and actors creatively manipulate societal rules and, in so doing, strengthen or mutate the existing social structure, which all the while is being transformed (intensity and rapidity of change vary) through recursive interplay (see Giddens 1984).¹ Varela and Harré (1996) emphasize social rather than individual causality. They speak of “a mutual process of consideration whereby persons consider how the other person will, can or could act in response to their own act *in order to direct themselves to act in such a way that a joint or social act is accomplished*” (Varela and Harré 1996:

323, emphasis in original). Archaeologists now recognize that the “source of activity in any given society is the agentic efficacy of the human beings that are the members of that society . . . people are the powerful particulars that constitute social entities like institutions” (Varela and Harré 1996: 316).

Archaeologists purport to see actors and agents in the eroded ground through the material residue of their actions, for “it is by the power to manage symbols that people bring social order into being” (Varela and Harré 1996: 316), as many archaeologists have shown from the level of artifact to architecture (e.g., Beaudry, Cook, and Mrozowski 1996; Hodder 1982, 1989; Parker Pearson and Richards 1994 *inter alia*). And these symbols—tangible and intangible—are created and manipulated by the practice of persons (e.g., Hodder 1982; Shanks and Tilley 1988 *inter alia*); they play a key role in reproducing culture and society.

Agency theory, structuration theory, practice theory, and other du jour theories are a continuing reaction to the nomothetic, ecosystemically based positivism of processual archaeology and to the “static position practices” (Varela and Harré 1996) that are a necessary component of our work as archaeologists. The new critical approaches privilege internal societal dynamics over cross-cultural comparison and push us toward a search for socially active, strategizing human beings who exercised an active role in shaping their lives and who formed multiple and overlapping networks, the latter sometimes simultaneously in conflict and contradiction with each other. Nevertheless, we should not eliminate legitimate, processual concerns with demography, ecology, and technology from the consideration of how societies become complex.

Theory is a source of models (but not definitive truth) about how ancient people could have behaved. To me as a field archaeologist, the issue is how much of current critical theory can be applied to complex ancient societies on the basis of the empirical material record rather than dogmatic insistence and/or wishful theoretical expectations. (Can we really know the subtle intimacies of everyday life among past non-Western, noncapitalistic, nonlettered ancient people?) I think that some aspects of currently fashionable theory can be appropriately applied to the past so as to achieve a richer reading of the material record but with more caution and humility than I see expressed in some of the recent literature. Let’s look at some of the salient theoretical propositions and consider their operationalization and operationalizability by archaeologists.² Then I will turn to Nasca society in the light of this discussion.

1. Conditions of unequal power exist in society. With-

in this reality, people achieve their goals by conflictual strategizing in which symbols of domination are acknowledged in exchange for access to scarce, including prestige-enhancing, resources. The archaeologist is challenged to consider how inequality arose and became institutionalized, that is, the specific issue of agency and its intersection with practice theory.

Comment/Example: Archaeologists have been concerned with these inequalities for some time. Helms (1976), for instance, proposed that status-seeking individuals from ancient Panama traveled to Colombia to obtain esoteric knowledge that was parlayed into culturally tangible rewards back in their local societies while enhancing the status of their foreign teachers. She says, “Since esoteric knowledge, like all aspects of chiefly power, must be activated to be effective, . . . this elite intellectual quest was given material expression through . . . material goods” (Helms 1976: 178).

2. Structure is the unintended result of social (more than one individual) actions, and, at the same time, structure is the medium through which agents’ goals are achieved.

Comment/Example: Archaeologists claim to have found demonstration of this in the archaeological record. I am thinking most especially of Moseley’s (1975b: chap. 7) discussion of the causal space-time relationships among monumental architecture, corporate authority (read: elite agents), and the shift to inland irrigation agriculture between the late Preceramic and Initial Period in Peru. Moseley (1975b: 118) writes, “we can see neither when nor the reason why individuals first surrendered labor to the collective and to the dictates of higher authority . . . presumably the initial abdication to corporate authority was voluntary and took place at an early date . . . Monumental architecture is the primary source of knowledge about early corporate authority and labor organization, but it would be wrong to assume [that] either the maritime population or the power structure had more than a secondary concern with corporate construction. Their interests lay not so much with erecting a platform mound, but with what went on around and atop the structure. Here were the truly spectacular and impressive corporate activities, and we know nothing of them.” Working from the perspective of Mississippian Cahokia, Pauketat (2000: 123–124) speaks of “monumental practice” and argues that monumental constructions were “not the consequences of political actions to legitimize centralized authority but [were] these formations in the process of becoming . . . Common people actively created monumental changes, perhaps beneficial (within their historical frames of reference) in the short-run, but dele-

terious to their own ability to coordinate action in the long run . . . traditional practices were appropriated through coordinated constructions that subsequently disabled collective actions except as coordinated through centers.” Ultimately, Moseley is saying the same thing as Pauketat.

3. Although structure is unintended, agents are quite cognizant of social reality and exploit it to their advantage through their informed actions. Agents reflexively monitor their actions, making necessary adjustments so as to produce the desired outcome (sociopolitical organization favoring them).

Comment/Example: An example might be the various construction phases of ceremonial mounds that maintain consistent form over time. I am again specifically thinking of Moseley’s (1975b: 101–102, 112–114) proposal that late Preceramic coastal populations were “pre-adapted” for the irrigation systems and great civic-ceremonial centers of the Initial Period and the “authority” he believes these manifested. Also, Burger and Salazar-Burger (1991: 292–294) argue that the repeated construction phases at Initial Period Cardal on the central coast indicate “the evolving structure of the community responsible for its construction . . . ideological continuity within the cyclical parameters of sacred time.” Burger and Salazar-Burger (1991: 293) suggest that although “leadership based on personal authority must have existed in order to coordinate the construction of complexes such as Cardal . . . it could have been based on charisma and sacred knowledge, lacking the connotation of power and coercion associated with later Andean societies.” The counterargument would deny calculating intentionality to the elite and argue instead for a mystified public ideologically duped into participation in the means of their own growing repression (i.e., a neo-Marxist argument, now cast in a discourse of practice that deemphasizes the economic bases of inequality). Interpretation of the same or cognate data sets from prehistoric archaeological contexts hinges on the favored theory as much as on the material record.

4. Structure is a flow, a process: “structure is what gives form and shape to social life, but it is not itself that form and shape . . . structure only exists in and through the activities of human agents . . . structure . . . exists only in a virtual way, as memory traces and as the instantiation of rules in the situated activities of agents” (Giddens 1989: 256). Thus, structure is action with realizable potential/enablement for agents.

Comment/Example: Structure and practice are theorized on the basis of observed ephemeral moments up to generational processes. Archaeologists cannot see pro-

cess until change is temporalized. In the Andes we typically work in century-long epochs that characterize and conflate many moments and actions as one. Elsewhere the time scale may be more refined, thanks to dendrochronology (e.g., the U.S. Southwest) or inscriptions (e.g., the Classic Maya region). But as archaeologists we have access only to frozen flows, not the constantly moving and shifting flows of everyday life (the intersection of Giddens, Bourdieu, and de Certeau). Archaeologists see the outcomes of the flow but not the flow as it is happening/becoming. We are capable of excavating “memory traces”/traditions in remains such as architecture and pottery. We can recognize the contexts of artifact use and with them situate agents. But this is still a rather coarse-grained understanding of social life.

5. Power (“transformative capacity”) is manifested through social relations that produce form through action. This analytical approach to power (“dialectic of control”) is praxis oriented.

Comment/Example: There probably is no better demonstration of this point than the organization of labor in the Inca Empire and the relationship of Andean curacas to their followers/populace. Murra’s (1980) recognition of the Inca principle of “reciprocity writ large” recounts how social relations may be manipulated to transform a flowing social structure (so to speak) into a new current through consciously engineered tinkering with customary interactions. Ramírez (1998), Schaedel (1988), and numerous other scholars have analyzed the ethnoconcept of leadership in Andean societies on the eve of contact and found that in their tactics the native lords walked an exquisitely thin line between demand and request and generosity and accumulation in their interpersonal relationships with equally strategizing potential supporters or opponents and actual tributaries.

6. Ideology is those beliefs that are instruments of action. As such, ideology is strategized by both agents and actors.

Comment/Example: A concern with “active” ideology is evident in many recent archaeological writings. Earle (1991, 1997; Earle, ed. 1991 *inter alia*) has been especially influential, emphasizing that those who come out on top in their respective societies have been able to seize control of legitimating principles or have created new principles of legitimacy and, at the same time, have seized control of internal and external wealth production. Like various others, he underscores that ideology is a source of power, and, as such, it is materialized. It is this materialized power that archaeologists are capable of recovering in the archaeological record (see Bawden 1996 and Freidel 1992 for particularly clearly presented cases illus-

trating this), but, again, we cannot get at motivation beyond “aggrandizement,” a very Western concept.

7. Time and space are culturally produced and central to social life. Time-space relations are constitutive features of social systems. Time-space expresses the nature of society and its material manifestations. Time-space is always dynamic, never static. People exist within their progressing but repetitive daily lives (practice) and the *longue durée* of institutions.

Comment/Example: Archaeology is significantly empowered to tackle time-space problems because of the deep temporal and wide spatial perspective achieved through survey and excavation. As a large number and range of sites of particular societies and traditions are excavated we will be able to see the dynamic interplay between subsistence households and elites, between core and periphery, between earlier and later times. Nowhere has the potential for such analyses been more realized, in my opinion, than in the revitalized field of Mississippian archaeology (see, e.g., Emerson 1997; Pauketat 1998; Pauketat and Emerson 1999).

The Nasca Construction of a Landscape of Meaning and Knowledge

Politics is often called “the art of constructing what is possible.” This construction has tangible expressions, now and in the past. Certainly, political aspects of Nasca society were represented on the landscape, as were Nasca’s social, economic, ideological, and artistic forces and institutions. The landscape was legible and made social life legible and comprehensible. Through the act of physical construction, volumetric or not, the landscape was controllable. It targeted an audience: the members of the construction group, others of the same society, others outside the society, both groups, different groups within a society, and so on. Nasca society expressed and reproduced itself on the ground as it did in portable art. Meaning and power produced and were produced by the nested Nasca landscapes in mutually reinforcing relationships. The landscape was mnemonic and was surely read by all members of Nasca society, though the story line would have varied somewhat or significantly according to the viewer-participant’s social and situational perspective and knowledge. Cahuachi, Los Molinos, La Muña, Site 455, Site 106, Site 165, Site 552, the Pampa, and, indeed, all other Nasca sites made visible statements about the current and proper workings of the world. The scale of reference ranged from local to all-encompassing.

The labor mobilization to make the geoglyphs—or any other large-scale work—had to have implicated

counting. In *The Social Life of Numbers*, a study of Quechua mathematics, Urton (1997) eloquently demonstrates that numbers do not just count: numbers have values and relations and encode information on social, familial, and political relationships and structure. We will never know if the Nasca conceptualized in the same way as the Quechua, but they had to have had a technology of knowledge among which reckoning had a societal context. Its verbalization implicated language, and scholars recognize that language, as well as action, organizes and subdivides space and time (see, e.g., Levinson 1996).

Nasca architecture and built environments also implicitly involved social memories of the past and projections or expectations of the status quo into the future. Collective memory, ritual performance, and commemorative ceremonies were interlinked and inscribed on the stage of Nasca landscape and cued by it (see discussions of memory in Connerton 1998; Halbwachs 1980). Whereas capitalism promotes “the repeated intentional destruction of the built environment” (Connerton 1998: 64), in many complex traditional and ancient societies the guiding ethic was anything but that: the volume, mass, and rebuilding of so many sites, especially civic-ceremonial, clearly indicate the intent of the makers that they endure. Similarly, the inscribing of ethnic identity by means of bodily practice such as cranial deformation constituted a device for storing and imparting information at the time and consciously and expectedly into the future. However, memory is dynamic and active: it is a process. Inevitably, circumstances evolved so that over time—sooner or later—the meanings ascribed to these memory vehicles were negotiated and contested, and they changed. Eventually, memory was replaced by forgetting, by cognitive erasure, and by new narratives built of other texts. This is what archaeologists are capable of seeing in the material landscape.

In this book I have focused on the Ingenio and middle Grande Valleys in particular and the Río Grande de Nazca drainage in general in order to examine how Nasca groups organized themselves locally and at increasing scales in order to achieve social goals and economic necessities. I have argued that social groups organized the landscape rather than reacted to it. My point is that landscapes are not naturally occurring and that a landscape cannot be viewed exclusively in terms of its economic resources and their organization; rather, human groups create social and built environments. Landscapes are used and modified, and new landscapes are built to create culturally meaningful settings for human social life. These encode information and represent society. I also have previously argued that pilgrimage temporarily but

repetitively created and reflected these culturally meaningful landscapes, sacred geographies, and sociopolitical structures (Silverman 1990a, 1990b, 1993a: 316–317).

The Nasca landscape was complex. It was marked with geoglyphs, settled with habitation sites, memorialized in cemeteries, and ritualized at ceremonial centers. This complex landscape was a text—a storehouse of knowledge—of the current proper workings of society. Foucault (1980: 69) argues that “knowledge functions as a form of power and disseminates the effects of power.” Similarly, Blanton (1995: 112) has observed that in situations of emergent inequality elders have a monopolizing strategy that encompasses control of knowledge in addition to control over other domains. In the diachronic reconstruction presented below, I suggest an evolution of such systems of knowledge and power.

Nasca 1 in the Río Grande de Nazca Drainage

I see the emergence of the Nasca cultural tradition in at least some of the valleys of the Río Grande de Nazca drainage in Nasca 1 times in terms of (1) the veritable cultural break between Tajo (Ingenio’s late Early Horizon pottery style and culture) and the dramatic Nasca 1 florescence, at least as manifested in the Ingenio–middle Grande region; (2) the emergence and primacy of Cahuachi; (3) the existence of geoglyphs made by the subtractive technique; (4) the use of slip painting; (5) the intense use of ceramic drums, panpipes, and trumpets related to the cult; and (6) the elaboration of cross-knit looped textiles. In contrast, Carmichael (1988) sees a Nasca Cultural Tradition beginning with Nasca 2, not Nasca 1. Similarly, Cook (1999) has created a “La Peña” phase for the Ica Valley encompassing Ocucaje 9, Ocucaje 10, and Nasca 1. More investigation of the Paracasto–Nasca transition or, depending on one’s point of view, reorganization is needed, particularly in the Río Grande de Nazca drainage, where the process may also involve migrants from the Ica Valley (see Silverman 1994a).

Nasca 1 settlement patterns were highly differentiated. Although there was a Nasca 1 domestic occupation at Cahuachi (Strong 1957; see analysis in Silverman 1993a: 44–50, 64), the site already was in a physical and conceptual class by itself by virtue of its unique, volumetric architecture. I refer specifically to the Step-Fret Temple (Orefici 1987, 1988). This was a more imposing structure than any other known in the drainage at this time, suggesting that Cahuachi already had a ceremonial focus at the very beginning of the Early Intermediate Period and probably was the most important site in the Río Grande

de Nazca drainage. I have every expectation that other monumental Nasca 1 structures will be found underlying the later construction phases.

The existence of the Step-Fret Temple and other assumed ceremonial constructions at Cahuachi would explain the significantly greater quantity of Nasca 1 finewares (e.g., Cahuachi Polychrome Incised Thick and Thin, Cahuachi Polychrome Incised and Modeled Thin, Cahuachi Stylus Decorated, Cahuachi Polished Black Incised, etc.) at this site than present on the surface of the many Nasca 1 sites identified on survey. Yet the significant number of Nasca 1 pots in museum and private collections indicates that in death individuals had access to the finest pottery. Many of these fine Nasca pots are known to come from the Ica Valley (see Menzel, Rowe, and Dawson 1964: 251–256; Strong 1957: fig. 7).

In Nasca 1 times in the Ingenio–middle Grande area there were simple small and large habitation sites, habitation sites with highly differentiated architecture, discrete and encapsulated civic-ceremonial centers, cemeteries, and geoglyphs. The heterogeneity of the Ingenio–middle Grande settlement pattern is matched by Palpa’s (see Browne 1992). In both areas the Nasca 1 settlement pattern involved an increase in the number and size of sites over the Early Horizon pattern (Silverman 1994a) as well as sites exhibiting internal differentiation, sites of significantly larger size than other sites, and sites having civic-ceremonial features (Sites 80, 165, 220, 455, and 552 in Ingenio; Cerro Carapo in Palpa). Site 220 and Cerro Carapo are noteworthy because they were large hillside settlements built of apparently undifferentiated, repetitive habitation terraces that were sited at river junctions (Ingenio–Grande and Palpa–Vizcas, respectively) to take advantage of a large, well-watered tract of land. The location of both sites at a tinkuy also could have been conceived as advantageous in supernatural or symbolic terms by the sites’ inhabitants. Interestingly, Sites 220 and 455 were effectively abandoned after Nasca 1 despite their size (in the former case) and internal complexity or presumed importance (in the latter case).

Nasca 2 in the Río Grande de Nazca Drainage

As the site is thus far known, the only evidence of Nasca 2 habitation at Cahuachi comes from Strong’s apparently special-purpose textile craft-residential locus at Unit 7. Possibly, Unit 7 housed resident textile workers in the service of the cult at Cahuachi. Thus far, this is the most notable locus of Nasca 2 occupational activity at Cahuachi. In addition, there is the possibility that similar

fine textiles were being made around Cabildo in the middle Grande Valley, if the attributed provenience of looted materials studied by Sawyer (1997) is correct.

There is every indication that the Nasca religious cult was growing. Strong's (1957) recovery of abundant Nasca 2 pottery (both Cahuachi Polychrome and finer material) at Cahuachi indicates that construction of ceremonial architecture was expanding. Strong determined that the Great Temple (Unit 2) began to be constructed at the end of this phase. In addition to construction at Cahuachi, the Nasca pottery style continued to develop, as seen in the notable elaboration of ceramic drums and panpipes having very complex supernatural or mythical imagery. It is clear that there was a significant increase in the manufacture of ceremonial objects and ritual attire in Nasca 2, coincident with the growth of Cahuachi. Civic-ceremonial sites, besides Cahuachi, existed as well, notably, Site 106 in the Ingenio Valley, which also had associated habitation areas. Interestingly, no Nasca 2 burials are known from Cahuachi. Furthermore, Carmichael (1988) has no evidence of marked status differences in his sample of Nasca 2 burials overall.

There are somewhat fewer Nasca 2 habitation sites in the Ingenio—middle Grande region than existed in EIP 1. Browne (1992: 79) also sees some reduction of settlement in Palpa in Nasca 2, though he cautions that this may be due to sample bias. Inasmuch as I detected the same pattern, I think his data are valid. Most Nasca 2 habitation sites are simple domestic settlements, from small to large. A few settlements, however, exhibit internal differentiation, such as Site 111 in Ingenio, which has better and poorer areas of habitation. I have already mentioned Site 106. Site 80 may have declined somewhat. Sites 165 and 552 continued to be important, and Site 515, a massive hill huaca in the middle Grande, may have been growing. Thus, it is appropriate to speak of intersite stratification in Nasca 2 times. Interestingly, iconographically complex Nasca 2 pottery was not widely distributed at habitation sites; rather, most of what I could identify on survey as Nasca 2 was Strong's (1957) Cahuachi Polychrome type.

The Nasca 3 Florescence and the Apogee of Cahuachi

After Nasca 1 or Nasca 2, ceremonial and habitation functions were separated at Cahuachi (see Silverman 1993a). Previous areas of domestic occupation at the site were abandoned as Cahuachi developed a hypertrophied ceremonial function. Nasca 3 was the apogee of Cahuachi,

and Cahuachi was the preeminent site in the Río Grande de Nazca drainage. More construction was undertaken at Cahuachi in Nasca 3 times, and more pottery was consumed at the site than in previous epochs (Strong 1957; Silverman 1993a: chaps. 4, 9, 12, 14, fig. 16.50). I have interpreted Cahuachi as an empty ceremonial center that came to life frequently through pilgrimage activity, conceivably conducted around a ritual calendar (e.g., Silverman 1988a, 1993a, 1994b). It was during these episodes that the public architecture of the site was built, maintained, and modified, and enormous amounts of pottery, textiles, food, and other material goods were consumed (and entered the archaeological record).

At this time, fancy textiles were replaced by pottery as the principal medium of iconographic expression. Nasca 3 textiles, as currently known, are more simply decorated than those of Nasca 2, relying mostly on three-dimensional borders around a plain groundcloth (see O'Neale 1937). I think that in Nasca 3 each of the social groups I hypothesize to have existed were producing their own textile materials; the border elements I recovered from a storage jar at Unit 19 would be evidence in support of this contention (see Silverman 1993a: fig. 12.35, table 18.1 and its associated figures). At least some of this textile work was destined for burial shrouds (see Silverman 1993a: fig. 18.4).

The growth of Cahuachi but lack of evidence for a large, residential population there is balanced by the abundance of Nasca habitation sites throughout the Río Grande de Nazca drainage (Browne 1992; Browne and Baraybar 1988; Schreiber and Lancho Rojas 1995). There were many Nasca 3 habitation sites in Ingenio—middle Grande and Palpa. Site 165 was larger and more differentiated than before, but most habitation sites were functionally redundant, irrespective of size. In the southern tributaries, too, "Early Nasca" (Nasca 2, 3, 4) people "lived in small scattered villages in the Andean foothills . . . villages were located only in those portions of the valleys with reliable sources of water" (Schreiber 1999: 167).

In the survey area Sites 80, 515, and 552, with major civic-ceremonial functions, reached their apogee. The Site 106 complex that arose in Nasca 2, however, disaggregated in Nasca 3 into its component sites with the apparent loss of Site 106 itself. I cannot explain the observed change other than to suggest that the site was eclipsed by Cahuachi (or perhaps those responsible for Site 106 constructed a new ceremonial locus at Unit HH at Cahuachi, a hill mound that, as previously indicated, strongly resembles Site 106). In Palpa Browne (1992: 79) observed that "no particular domestic site is predominant in terms of scale or special architecture, but sites of

civic-ceremonial character assume a more prominent position in the hierarchy of site functions.” Reindel and Isla (1999) identify Los Molinos as the preeminent Nasca 3 site in Palpa. Schreiber (1999) indicates the existence of two small “platform mound and cemetery complexes” at Pueblo Viejo and Cantalloc in the Nazca Valley.³ There are no “centers” in Taruga, Chauchilla, and Las Trancas. The apparent lack of early Nasca civic-ceremonial loci in the valleys south of Nazca may indicate a situation of sharply unequal development in the drainage.

Looking at the drainage overall, it is clear that Cahuachi was the primate civic-ceremonial center in a highly differentiated landscape of habitation sites, smaller civic-ceremonial centers, and, of course, cemeteries and geoglyphs. Los Molinos appears to have integrated its own discrete region in Palpa (Reindel and Isla 1999). Site 515 dominated the middle Grande Valley. Sites 80, 165, and 552 formed a significant concentration of population and major civic-ceremonial architecture along the south side of the middle Ingenio Valley. It will be important to characterize Nasca 3 pottery from these different cultural foci and compare the results to see if this appearance of regions is reiterated in pottery production.

I believe that this differentiated landscape supports my model of “provincial temples” at Cahuachi: that many of the mounds of Cahuachi were built by local social groups in the drainage who maintained them as shrines and that larger groups maintained larger temple mounds and smaller groups built lesser mounds (see Silverman 1993a). The differences of scale and complexity in the architecture of Nasca 3 Cahuachi are congruous with Nasca 3 settlement patterns in the drainage.

However, I cannot explain the origin of the concentration of monumental architecture and exquisite material culture (pottery, textiles, pyroengraved gourds, carved stone beakers, and so on) at Cahuachi other than to argue, as I have before, that the site had a perceived (cognitively constructed) sacred geography that led to its development as the seat of the Nasca cult and focus of pilgrimage with whatever political aspects this may have entailed (Silverman 1988a, 1990a, 1993a: chap. 22, 1994b *inter alia*). My interpretation also may be parsimonious with the one proposed by Brumfiel (1994: 11) in her discussion of factional competition: “Monumental architecture might involve manipulation of the symbols of group unity: the ancestral or patron deity. Such symbols would be most prominent under conditions of competition at the regional level as part of an effort to create bonds between leaders and followers that could not be easily transferred to competing leaders. . . . Public architecture also suggests efforts to impress a regional audi-

ence of potential allies and rivals who use the size of the building projects to judge the size and commitment of one’s following.”

The reconstruction of Nasca pilgrimage to Cahuachi is congruent with Pauketat and Emerson’s (1991: 919–920) argument about rites of intensification for the paramount Cahokia site: “calendrically based, community-focused rites that play a critical role in the resolution of cosmological discontinuities in the annual ritual sequence . . . are based on community-wide participation, which requires a symbolic text both highly visible and understandable to the masses.” At Cahuachi, that text was constituted by the sacred geography of the site; its monumental architecture, which must have had symbolic meaning; the geoglyphs on the Pampa opposite Cahuachi; and *sacra*, the highly iconographic pottery and other specialized material culture used in ritual activity at the site.

Given the absence (at present) of significant mortuary differentiation in early Nasca society and the lack of iconographic portrayal of recognizable elites, the early Nasca data appear to fit Feinman’s (1995) corporate strategies and processes and Renfrew’s (1974) group-oriented chiefdom, by which disproportionate personal accumulation of wealth was eschewed or, for reasons that must be explicated, not attainable. I think that political power and social differences in early Nasca society were not exclusively or primarily based on the economy. As the paramount ceremonial center of early Nasca society, Cahuachi exercised centrifugal and centripetal forces on the interaction sphere and pilgrimage orbit it animated. Precisely because early Nasca society was composed of discrete societies participating in the Nasca cultural tradition and religious cult, each group and individuals within each group had the opportunity to interact differentially with others within and outside the system. I continue to see Nasca 3 society in the Río Grande de Nazca drainage as segmentary rather than politically centralized but with a universally accepted cult center at Cahuachi in addition to local and regional ceremonial foci, including huacas and geoglyphs.

The unrestricted distribution of iconographically complex early Nasca pottery in habitation sites of all size and complexity, the ubiquity of geoglyphs in the valleys, and the characteristic manners of creating sacred space and making burials all suggest *doxa*: “the everyday, experiential, taken-for-granted arrangements of the worlds in which people live. These arrangements are neither imposed nor are they identified only with the political interests of a distinct subgroup. . . . *doxa* is shaped during the act of living via the social and physical landscapes

within which people dwell and within which they learn the meanings, beliefs, values and the like, of their world” (Pauketat and Emerson 1999: 304). These meanings, beliefs, values, “and the like” were practiced in domestic form and, recursively, reiterated and reified in ritual performances at Cahuachi, resulting in an orthodoxy or cultural hegemony by which the dominant worldview was naturalized.

The Nasca 4 Collapse

Although some ceremonial construction continued at Cahuachi in Nasca 4 times, it appears that the use of the site significantly declined (Rowe 1963: 11–12; Silverman 1993a; Strong 1957). Presumably, organized pilgrimage ceased. No Nasca 4 burials are known, at present, from the site. However, postapogee offerings, including trophy heads, were left in these abandoned architectural contexts beginning in Nasca 4 times.

The decline of Cahuachi is mirrored by a decrease in habitation sites in at least the Ingenio, middle Grande, and Palpa Valleys based on my survey data and those of David Browne. Not only are there fewer Nasca 4 sites overall, but many of the habitation sites in the Ingenio, middle Grande, and Palpa Valleys have Nasca 3 and 5 components without Nasca 4 or with comparatively few sherds of that phase. The Ingenio Valley nexus formed by Sites 80, 165, and 552 also collapsed after Nasca 3; interestingly, though, it arose again in Nasca 5 for reasons that remain to be explained. Site 515 was permanently abandoned after Nasca 3, simultaneously with Cahuachi. The most intensive use of civic-ceremonial sites occurred in Nasca 1, 2, and 3, and the massive hill huacas do not have occupations after Nasca 3. Given the magnitude of Los Molinos, it is especially significant that this site was abandoned after Nasca 3 (Reindel and Isla 1999).⁴ In view of their simultaneous collapse, the fortunes of Los Molinos might have been tied closely to those of Cahuachi.

With this collapse, there is no evidence of intrasite or intersite differentiation in Nasca 4 settlement patterns in the Ingenio–middle Grande region. Nevertheless, complex Nasca iconography still continued in circulation throughout the Río Grande de Nazca drainage, and Nasca 4 pottery is quite well known in Ica, though with significant intraregional variation in comparison to its previous homogeneity in Nasca 3 times (see Proulx 1968, 1970). Indeed, some ordinary Nasca 4 habitation sites were quite successful settlements with significant use of Nasca fineware (see Vaughn and Neff 2000).

The issue, of course, is why Cahuachi collapsed and

why the system it integrated collapsed. If excavation continues to demonstrate a lack of significant permanent domestic occupation at apogee Cahuachi, this negative feature will have to be considered in our understanding of the demise of the center and the breakup of the societies it coordinated (see Silverman 1993a: 326). I also believe that the differences among the participating societies in the system integrated by Cahuachi contributed to the collapse of the Nasca 3 system. Perhaps Cahuachi declined because a system based on pilgrimage and ritual could not cope with the increasing tensions and contradictions of the constituent groups and/or the assertions of particular individuals or groups seeking to break the cultural norms of behavior to achieve individual or group benefit or power in society, perhaps such as those at Los Molinos; that is, the system became overloaded.

Regardless of why Cahuachi ceased to function as the premier early Nasca ceremonial center, the result of its decline is clear on the Nasca landscape. Nasca 4 was a time of crisis in the Río Grande de Nazca drainage, as evidenced by the dramatic changes in settlement pattern I have summarized above. The collapse of the Cahuachi system was followed by a remarkable rearrangement of settlement and society in the Río Grande de Nazca drainage. Let’s turn to those data.

New Arrangements in Nasca 5

There is a single radiocarbon measurement for Nasca 5: 1430 ± 90 (L-334E, reported in Strong 1957). If that date is correct, the phase is contemporary with the sixth-century droughts, the construction of the filtration galleries (Schreiber and Lancho Rojas 1995), the tripartite split in the Nasca 5 art style into three substyles (Conservative Monumental, Progressive Monumental, and the Bizarre Innovation; see Blagg 1975), the new voluptuous seated naked women figurines and prevalence of women in Nasca 5 iconography (Proulx ms.), the new bloody mouth iconography of the Killer Whale (see, e.g., Roark 1965: 25; Seler 1923: fig. 46d), increased trophy head taking (Browne, Silverman, and García 1993), the creation of the La Muña necropolis, and the rise of the expansionist Wari state in the adjacent Ayacucho highlands. The many changes in Nasca 5 society were systemically related and resulted in the emergence of a new social formation radically different from the early Nasca one. Nasca 5 was a dynamic period of great experimentation along many parameters.

Settlement Patterns

Architectural modifications of Cahuachi in Nasca 5 times were minimal (see Silverman 1993a: 155–156), and building at the site apparently ceased immediately following. Cahuachi became, instead, an appropriate place for burial. Burials at Cahuachi were now placed in cemeteries in open areas between the mounds (Burial Area 1 in Strong 1957: 32, 34, figs. 4, 13C–E, 14B, D, E, G–J, table 4; L-335E/Burial 4; Silverman 1993a: chap. 14) in contrast to the Nasca 3 pattern at Cahuachi of burials on mounds. Also, trophy heads and other items were left as offerings in abandoned architecture (Silverman 1993a: chap. 12).

In Nasca 5 the landscape was once more highly differentiated, albeit without a single, dominant central place in the drainage, as had been Cahuachi. There were habitation sites of varying size and configuration, cemeteries, civic-ceremonial sites, and geoglyphs. While most habitation sites were redundant, several were internally differentiated in terms of architecture or had architecture that was significantly different from that present at the majority of other Nasca 5 habitation sites. Sites 165 and 552, with both habitation and civic-ceremonial aspects, had major Nasca 5 occupations. In addition, Sites 80 and 296 were important Nasca 5 civic-ceremonial centers, and various smaller ones existed. In the survey area, only two civic-ceremonial sites appear to have been initiated as late as Nasca 5, and both had compartmentalized rather than volumetric architecture. Interestingly, all of the architecturally compartmentalized civic-ceremonial sites in the survey area appear to have had Nasca 5 occupations and, in some cases, later occupations. Also, La Muña in Palpa had major civic-ceremonial architecture in addition to its necropolis (Reindel and Isla 1999).

Schreiber and Lancho Rojas (1995) see a dramatic shift in settlement pattern in the southern tributaries at this time: people moved into the middle valleys. They attribute this change to the opening up of the filtration galleries, which would have provided irrigation water to these water-poor stretches. Such an economic intensification in previously marginal areas of the southern tributaries of the drainage could have been provoked by population pressure, perhaps resulting from the sixth-century droughts (Silverman 1993a: 327; Thompson et al. 1985). The irrigation of reclaimed lands appears to have encouraged population growth in late Nasca times in the southern half of the Río Grande de Nazca drainage (see Schreiber 1998). In contrast, Browne (1992) and I perceived significant population decrease in the northern half of the drainage, where filtration galleries are unknown.

These settlement pattern data suggest that in the Río

Grande de Nazca drainage the landscape balkanized after the demise of Cahuachi. Yet, as we shall see, Nasca society was again florescent.

Sociopolitics of the Filtration Galleries

The development of the filtration galleries is theoretically as well as empirically significant. A large body of important literature deals with the relationships between water control, agricultural intensification, and the rise of complex society (e.g., Downing and Gibson 1974; Price 1971; Steward 1955; Wittfogel 1957). Nocete (1994: 172) has stated that “rarely do . . . societies identified as chiefdoms develop any important technological advances linked with the process of subsistence production.” He suggests that such an economic intensification would have made social relations more complex (Nocete 1994: 172). I believe that the Nasca 5 filtration galleries data show a significant subsistence-oriented technological advance that contributed to the increasing differentiation of Nasca society.

Perhaps some kinds of knowledge in Nasca society were not shared by everyone. Certainly, knowledge about the nature of Nazca’s subsurface hydrology could have provided a significant venue for the development of different roles and prestige in Nasca society. I hypothesize that there were human agents in ancient Nasca society who perceived the behavior of Nazca’s subsurface water and devised a culturally appropriate response to chronic water shortage. These special individuals—“priests” or “shamans”—could have literally mapped onto the hydraulics underpinning ancient Nasca society in the southern tributaries by conceiving of and creating the filtration gallery system, which in turn determined settlement. In so doing, they may have come to control and manipulate knowledge, thereby enhancing their position in society. Especially in Nasca 5 times, when drought conditions were beginning to affect the drainage, these individuals could have been able to take advantage of the opportunity presented by crisis to maximize their position in society through their understanding of Nazca’s water resources and ability to locate water for the increasingly parched valleys, their mobilization of the labor force to map and tap the resource, and their intercession with the natural forces cum deities believed to provide water.

Also of relevance to the filtration galleries is Brumfiel’s (1994: 11) discussion of factional competition: “successful coalition building may also be evident in constructions that by their size or complexity suggest communal labor . . . The particular type of labor investment reflects dif-

ferent strategies for competitive success. Agricultural intensification may improve the leader's ability to attract followers by sponsoring larger feasts or by supplying them with improved lands." Brumfiel's quote could well apply to the situation in Nasca at this time. I think there was a Nasca 5 landscape of competing and strategizing chiefs. These chiefs were constructing a new physical landscape comprised of buildings, tombs, geoglyphs, trophy head caches, and filtration galleries and were consuming a portable landscape of material culture such as symbolically charged and socially situated pottery. Parenthetically, I believe that the sudden interest in women in Nasca 5 ceramic art reflects an increased concern with fertility in the face of ever-worsening drought, a concern that, on the ground, was manifested in opening up the filtration galleries.

Materializing Ideologies

I believe that the demise of Cahuachi created a sociopolitical vacuum into which assertive individuals or groups stepped. La Muña exemplifies the dramatic change in Nasca society. The great elaboration of tombs at La Muña suggests strongly the emergence of individual leaders who were legitimating their rule through explicit kinship arguments or claims of descent rather than the more communal or group-oriented and ceremonial aspect of the early Nasca social formation. I also have argued (chapter 13) that La Muña's location at a tinkuy was the result of deliberate siting. I speculate that this location permitted emergent elites to appropriate Andean water cosmology, thereby enabling them to claim special supernatural power or ancestral authority (see, e.g., Reinhard 1992; Sherbondy 1992). In less speculative terms, based on its architecture and the patterns of human movement that this architecture would have permitted, it is likely that staged mortuary ritual and, possibly/probably ancestor cult activity, occurred at La Muña. The apparent increase of burial complexity between early Nasca and Nasca 5 times, as manifested by La Muña, must be taken as significant in the specific case of Nasca cultural evolution.

These changes in Nasca society were also reflected in the deployment of art. When the cult led from Cahuachi collapsed, Nasca religion became subject to great examination, contestation, and reinterpretation, resulting in the breakup of the coherent Nasca 3–4 style into the three styles or substyles recognized by Blagg (1975). The breakup of the Nasca 5 pottery style may have involved issues of agency, factionalism, domination, resistance, and negotiation and have been a tangible reflection of

competing worldviews following the breakdown of the Cahuachi cosmological hegemony.⁵ The materialized power of these iconographic decisions is suggested by Blagg (1975: 65–66), who argued that "the new relationships found in the Bizarre motifs stem from a very subtle understanding of Nasca iconography. . . . The Bizarre style could not have been created except by someone familiar with the Nasca style and aware of contemporary stylistic trends." Although the Bizarre Innovation impacted mythical iconography (Roark 1965), nevertheless, the ritual use of pots in this style could well have had a "mundane," that is, political, aspect. I think the Bizarre Innovation shows us a dynamic, conscious, newly manipulative attitude toward cherished beliefs. The Bizarre Innovation is a reconceptualization of the relationship between humans and the supernatural as well as between humans.

Trophy Head Taking

Actual trophy head taking increased in Nasca 5 times (Browne, Silverman, and García 1993; Silverman 1993a: 221–226, 327), perhaps as a prelude to the dramatic increase in militaristic themes on Nasca 6 pottery that Roark (1965: 56) argued was a reflection of Nasca sociopolitical reality. I have already highlighted the sociologically significant differences between early Nasca trophy heads manipulated by shamans or priests and late Nasca trophy heads manipulated by warriors or chiefs (see Browne, Silverman, and García 1993; Silverman 1993a: chap. 15 *inter alia*). To this analysis we may now add John Verano's (1995, also cited in Browne, Silverman, and García 1993) observation that although the forty-eight Nasca trophy heads from the Nasca 5 context at Cerro Carapo had been prepared in the same complex manner, the hand of individual preparers is visible in the variations in how the holes in the frontal and basal bones were made. This does not negate the ritual aspect of the late Nasca trophy heads; indeed, Baraybar (1987) has argued that cut marks in the scalps of many heads are evidence of deliberate ritual bleeding. The preponderance of male victims (see Verano 1995: table 1) suggests that battles such as that depicted on the Amano vessel (Verano 1995: fig. 11) may have provided the opportunity for obtaining trophy heads, in contrast to the view that these are the heads of revered ancestors (e.g., Tello 1918; see also Sonia Guillén cited in Browne, Silverman, and García 1993 and Silverman 1993a: chap. 14). Nevertheless, the Nasca prepared their trophy heads "with long-term curation in mind" (Verano 1995: 218; Guillén in Browne, Silverman, and García 1993). I believe that the ideology of trophy

head taking (related to beliefs about death, fertility, and the regeneration of life) was reworked in Nasca 5 times so that adult males now sought to take, display (as shown on modeled pottery vessels), and manipulate (as in the Cerro Carapo cache of forty-eight trophy heads) these heads to their own advantage (see Browne, Silverman, and García 1993; Silverman 1993a: 221–223).

Agency

Pauketat and Emerson (1999: 303) define ideology as “those views, attitudes, beliefs and values that are appropriated, projected, rejected and modified for political ends by specific interest groups.” The post–Nasca 4 recovery that occurred in the Río Grande de Nazca drainage in EIP 5 was guided by a set of rules very different from those that had operated in early Nasca times. When Nasca society reconstituted itself, it was in the context of extreme competition among human males undisguised as mythical beings and not acting as priests or shamans in a unifying religious cult. Those who once conducted their most important status displays and ritual participation at Cahuachi now used local stages: the pan-Nasca communal/collective context was replaced by localized status-maximizing strategies.

The unstable conditions in Nasca 5 times (drought, population pressure, the demise of Cahuachi, the growth of Wari in the adjacent highlands) must have been actively manipulated rather than passively reacted to. Such conditions may have provided an ideal milieu in which ambitious individuals or groups could assert themselves through professed abilities to claim access to supernatural power through orthodox (e.g., the Conservative Monumental Style) or unorthodox (e.g., the Bizarre Innovation) manners, knowledge of hydrology and climate (e.g., the opening up of the filtration galleries), understanding of and engagement with foreign societies (e.g., Lima society of the central coast, possibly with Wari), and so on.

Beginning in Nasca 5 times I think that the formerly more implicit arrangements in Nasca society became explicit as particular adult men did in life that which resulted in their self-glorification on portrait pottery as well as their burial in special facilities. Yet these men or factions thereof were not unified in belief and practice, as evidenced by the distinct substyles of the symbolically charged pottery in use at this time and by the different human resources of which they disposed. Some Nasca men were more conservative, others more progressive, others radical in their approach to and understanding of Nasca culture overall. Presumably, each elite male, ac-

cording to his bias and ability, was negotiating his participation in a shared culture of trophy head taking and ancestor cult.

To the contrary of the situation discussed by Gramsci (1971), by which a *dominant* ideology shapes and naturalizes a society’s worldview and cultural understanding and in which the elite control the ideology and seek to reproduce it in social and political terms, in Nasca 5 we see, I think, competitive elites with *different* ideologies of their world even if the cosmology they manipulate is the same (i.e., the Killer Whale is understood to be the Killer Whale, whether conservatively or bizarrely represented). Although I think it is appropriate to speak of elites in Nasca 5 times, the diversity of the Nasca 5 style manifests, I suggest, the balkanization of the social landscape, an emergence of competitive players no longer constrained by the cult and rules of pilgrimage at Cahuachi, which had maintained competition within culturally set bounds. Applying Bentley (1987: 44) to Nasca 5, it may be ventured that “in systemic terms . . . people freed from the constraints of conventional thinking can act in ways destructive of the existing order. On the other hand, the loss of coherence between experience and the symbols through which people understand it causes feelings of discomfort and alienation, of rootlessness and anomie. Both represent powerful goads to action, hence motives for political mobilization. Mitigating these factors requires institution of new regimes of domination adapted to new realities of power. Inevitably this process involves reconfiguration of the perceived world and of one’s place in it.” Foucault (1972: 191, 1973: 312) used the term “epistemological breaks” to describe these perceptual and conceptual discontinuities that take place rapidly. Nasca 5 society conforms to Bentley’s and Foucault’s analyses.

Late Nasca Times

Nasca 6 and 7 were poorly represented in the Ingenio–middle Grande survey area. None of the Nasca 6 habitation sites is large or complex, and Site 165 disappears as the great habitation site with encapsulated civic-ceremonial functions that it was in Nasca 5. These changes are paralleled at Site 80, where the Nasca 6 presence at the formerly great civic-ceremonial center is minor and almost restricted to geoglyphs. However, in the middle Grande Valley, specifically, civic-ceremonial occupations continued at two sites (Sites 296 and 313). In the Ingenio–middle Grande region, only a handful of habitation sites had Nasca 7 occupations; three civic-ceremonial sites continued to be used; five geoglyphs had Nasca 7 potsherds on their surfaces. I would not be surprised if

the limited late Nasca occupation of the Ingenio–middle Grande region was due to people having moved or been moved to the southern tributaries of the drainage to take advantage of the greater possibilities for agriculture there (i.e., the filtration galleries).

Browne (1992: fig. 8) had a similar impression of decline in the late Nasca settlement patterns in Palpa-Vizcas. He recorded 30 percent fewer Nasca 6 than Nasca 5 sites; none of the Nasca 6 occupations is the principal one. Browne (1992) similarly saw a great reduction of settlement in Palpa in Nasca 7 times. On the other hand, in their survey of Palpa-Grande, Reindel and Isla (1999) observed a slight increase in the number of Nasca 6–7 sites over Nasca 4–5 levels, and they argue that these late Nasca sites are larger, more planned, and more densely occupied.

Schreiber and Lancho Rojas (1995) concluded that in the southern tributaries there was a limited number of very large towns in late Nasca (Nasca 6–7) times and that during this period there was population aggregation and increased sociopolitical complexity. Schreiber (1999: 167–168) reconstructs a shift in settlement pattern between her Early Nasca and Late Nasca Periods in which “most people moved from a series of closely spaced small villages into a very small number of very large sites spaced more widely apart . . . There appears to have been movement out of the Nasca Valley into the valleys to the south. . . . The movement of settlement into the middle portions of each valley, regions in which the only source of irrigation water is by tapping groundwater, also suggests the construction and use of a system of filtration galleries . . . at this time.” But in the case of Nazca Valley, which had its own filtration galleries, the reason for its population decline should not have been determined by water availability.

I believe that the significant intervalley differences in settlement pattern in late Nasca times are not contradictory but, rather, indicative of strongly varying local responses to the unstable sociopolitical and climatic milieu. Also, if Wari was already on the south coast at this time (see Silverman 1988b, 1993b: 118), its role in the settlement pattern changes that are documented in the southern tributaries by Schreiber (1999) could be considered.

Ceramic iconography supports the argument that late Nasca society had become significantly more complex in sociopolitical organization than was the case in early Nasca times. There was a significant attempt (versus Roark 1965: 57) to represent the individual on pottery and to mark elite male status in such attributes as mustaches and goatees, insignia, and elaborate headdresses,

dress, feather cloaks, and earrings (in some cases made of *Spondylus*).

Nasca 8/Loro: The End of the Nasca Cultural Tradition

In 1952 Strong (1957) identified a distinct ceramic corpus during his excavations at the Huaca del Loro site in Las Trancas. He regarded this pottery as so different from the late Nasca material to which it was related that he coined a new style name, Huaca del Loro, after the type site (see Strong 1957: 40–41). I agree with Strong and have previously indicated the significant differences in this ceramic material from classic Late Nasca pottery (Silverman 1988b).

The dramatic changes in pottery style are accompanied by equally notable changes in settlement pattern. In the survey area the decline in sites that began in Nasca 6 and intensified in Nasca 7 reached its maximum in Nasca 8/Loro times (see chapter 12). None of the Nasca 8/Loro sites in the Ingenio–middle Grande region is a habitation site (or geoglyph). Rather, these sites are cemeteries with the exception of the continuing use of one civic-ceremonial center in the middle Grande. The function of four sites with Nasca 8/Loro pottery is unknown. No Nasca 8 sites are reported from Palpa (see Browne 1992).

Nasca 8/Loro sites elsewhere in the Río Grande de Nazca drainage appear to be restricted to ceremonial sites such as Huaca del Loro, Tres Palos II, Estaquería, the ritual entombment context of the Room of the Posts at Unit 19 at Cahuachi (see Silverman 1993a: chap. 13), and burials. Nasca 8/Loro burial patterns show significant changes from preceding Nasca phases, just as Nasca 8/Loro pottery diverges strongly from the preceding style. There is an increased frequency in multiple burials in Nasca 8/Loro times, though they are still uncommon (Carmichael 1988: 354). Some of these multiple burials may be high status family crypts as, for instance, Orefici's Nasca 8/Loro burial at Cahuachi (see Carmichael 1988: plate 1).

Interestingly, trophy head taking appears to continue in Nasca 8/Loro times, though we cannot know if it had similar function and symbolism as before. Ubbelohde-Doering (1958) reports nine trophy heads in his “Morro”/Nasca 8/Loro grave at Cahuachi. Two of these had been placed on a bed of coca leaves on the floor of the chamber, and under each head were several maize cobs. For Ubbelohde-Doering, the complex of trophy heads and maize confirmed the “magical use” of the heads, which he related to the fertility of the fields.

Studying Settlement Patterns and Understanding Sociopolitical Complexity

This book has shown that in the Ingenio and middle Grande Valleys all phases of the Nasca ceramic sequence are represented, though the sites defined by this pottery vary by frequency, distribution, and nature. Perceived changes in Nasca settlement patterns can be explained by contextualizing them within the larger sphere of Nasca interaction and influence, informed by theoretical perspectives on social complexity.

The now aging New Archaeology's quest for chiefdoms and states still drives many research programs. Armed with analytically contrived decision-making hierarchies, settlement pattern systems are identified with one or another evolutionary stage of cultural development. If we reconstruct a settlement pattern hierarchy of two levels, composed of a central place and lesser, commensurate settlements, we say this or that society was organized as a chiefdom (Peebles and Kus 1977). If we reconstruct a more differentiated settlement system, we claim there was a state (e.g., Wright and Johnson 1975; Isbell and Schreiber 1978). I have previously demonstrated that it is possible to arrange the Nasca sites of the Ingenio–middle Grande region into functional, decision-making site hierarchies of the kind associated with states (see Silverman 1993a: figs. 23.3–23.10) and also how, following Crumley's (1987) discussion of the principle of heterarchy, these settlement patterns can be collapsed into a less hierarchical configuration (see Silverman 1993a: fig. 23.11) that is more congruent with other available data on Nasca society that suggest a complex but nonstate configuration, what most would call a "chiefdom" or "ranked society."

But nomothetic laws of cultural causality and behavior cannot illuminate the societies created by classification. The categorization of a society's "level of sociocultural integration" (e.g., Steward 1955b) says little about a society's organization and evolution. Ethnographic as well as archaeological literature indicates a vast array of cultural configurations within and among culture areas, over time, and along a finely graded spectrum of sociopolitical complexity.

There is a place for settlement pattern hierarchies in archaeological analysis, for they provide a rough approximation of the sociopolitical and economic organization of ancient societies. However, as indicated above, they tell us little about many other aspects of ancient life. Settlement pattern analyses based on decision-making hierarchies typically eliminate or do not recognize a range

of culturally important places such as ancestral origin shrines, cemeteries, sacred mountains, river junctions, and so on. Diachronically, decision-making hierarchies can reveal change, but they do little to explain it. To more fully understand an ancient society we must look at the historically contingent landscape and its processes. We need to be aware of the social, political, religious, ideological, historical, economic, and other factors that may determine acceptable site spacing and patterning. For example, we need to consider that the spatial distribution of sites in a regional settlement system may, in addition to subsistence and administrative concerns, reflect and form fundamental cosmological and ideological principles about the social order and cognition of its participants. These principles constructed the natural and social world and were constructed by it. In order to reconstruct and deconstruct an ancient society we must deal with its several different, simultaneous, and complementary systems, which were concerned with access to critical subsistence (land, water), material (such as obsidian), and ideological (e.g., nonsubsistence luxury goods) resources. Furthermore, we need to work from local, regional, and macroregional perspectives, the former so as to gain a sense of the practice of daily life and the latter because no complex society existed in isolation of others. Without a Full Landscape Approach (chapter 1) and with all the methodological pitfalls inherent to survey, we run the risk of serious error and omission in our interpretations. And without excavation, survey results are incomplete.

Notes

1. Karp (1986: 137) distinguishes between actors and agents. For him, the terms "derived from different emphases or discourses. The actor refers to a person engaged in action that is framed, as is all social action. An actor's action is rule governed or oriented. The agent refers to persons engaged in the exercise of power in its primary sense of the 'bringing about of effects,' that is, engaged in action that is constitutive. Agency implies the idea of 'causal power' through which we realize the potential of the world." Power is the capacity to produce an effect. Actors would be people interpreting or behaving social rules through their daily activity, actors who actively and recursively live in their nonnormative cultural world, thereby transforming it (see Bourdieu 1977; de Certeau 1984). I consider agents to be actors and all actors to be agents because through their social actions they seek to achieve goals. However, I can see the utility of Karp's distinction in terms of distinguishing the elite world of overt exercise of power from the quotidian world of constant gradual change through practice.

2. In the following I have been greatly aided by Bryant and

Jary's (1991), Karp's (1986), and Pauketat's (2000) distillations of essentials.

3. Schreiber characterizes Cahuachi as a "platform mound and cemetery complex" along with the "lesser centers" of Pueblo Viejo and Cantalloc. I think this categorization is inappropriate given that most nonmound burials (cemeteries) at Cahuachi appear to postdate its apogee (see Silverman 1993a: chap. 7), and Cahuachi played a supravally role rather than a local one in the Nazca Valley.

4. Intrusive Nasca 4 and 5 burials were placed there afterward.

5. It will be crucial to see if Markus Reindel and Johnny Isla's (1999) Nasca 5 pottery from La Muña, a site that well could have been the center for one political faction in the drainage, shows the mixing of all three of Blagg's (1975) substyles, or if they are segregated by burial context. Characterization studies of Nasca 5 pottery are needed to determine if, indeed, the substyles had different locales of manufacture.

Nasca Archaeology in the Twenty-First Century

From an early concern with cemeteries as the source of collections of beautiful ceramic vessels for exhibition and/or chronology building and Nasca art as a subject of iconographic interpretation, Nasca archaeology has evolved to contemplate the origin, nature, and demise of this south coastal society through excavation and survey. Excavation has determined that Cahuachi was not the great urban center earlier posited (Rowe 1963 versus Silverman 1993a), clearly a necessary starting point for a data-based and theoretically informed interpretation of early Nasca society. Since then, surveys have established the range of Nasca sites (Browne 1992; Browne and Baraybar 1988; Carmichael 1991; Massey 1986; Proulx 1999; Reindel and Isla 1999; Schreiber 1989, 1998, 1999; Silverman 1990b, 1993b). Several excavations have been conducted at small domestic settlements (Isla 1992; Isla, Ruales, and Mendiola 1984; Vaughn 1999). The first systematic excavations of Nasca civic-ceremonial centers beyond Cahuachi are now in progress (see Reindel and Isla 1999). Also, excavations have been undertaken in the Pisco and Acarí Valleys that permit comparison of their EIP remains to those of Ica and Nazca so as to determine

the “Nascaeness” of their populations and the nature and development of their own societies (e.g., Silverman 1997; Valdez 1998, respectively). These projects are just a beginning. Follow-up excavation is needed in all of the valleys. This effort should keep dozens of archaeologists busy through the end of the present century.

There is a need for subregional, regional, and macro-regional perspectives on Nasca (as there is for the study of any other complex society), for Nasca was not a monolithic or monolithically evolving society, even though, in the Río Grande de Nazca drainage, Nasca was the exclusive archaeological culture of the Early Intermediate Period. There may have been significant intracultural variation within Nasca society along a range of parameters. For instance, I believe that future research will show that there were some valleys or valley sectors whose sociopolitical systems were more complex, others less complex. We might expect that Nasca society and culture will look different in Santa Cruz, with its small amount of arable land and limited water supply, than in the rich Palpa-Grande and Ingenio–middle Grande Valleys. A major issue is if filtration gallery agriculture in Nasca 5 (if it is

not earlier) produced or contributed to a different configuration in the southern tributaries than in the northern valleys.

There may be microstylistic variation within the Nasca pottery style from valley to valley that detailed iconographic and petrographic analysis could reveal. Other classes of objects must be examined as well. These kinds of analyses, particularly ceramic, will be crucial for defining exactly who was going to Cahuachi. Once known, we can ask why on a level more sophisticated than my pilgrimage model (e.g., Silverman 1990a, 1993a), for any group's relationship with Cahuachi necessarily involved issues of power, ideology, status enhancement, and negotiation.

Among the ancient Nasca, decorated pottery was part of an expressive, contextualized material culture. Each pot accumulated a life or social history. However, these histories are unknown to us, and the objects themselves are unrecoverable until final deposition, presenting a challenge for interpretation. Reproblematizing Nasca pottery and all of Nasca material culture in the paradigm of materiality may direct us in profitable directions for understanding this society.

At the same time, pottery-based relative chronology remains an important concern. The Berkeley seriation of the Nasca pottery style into multiple phases needs to be stratigraphically demonstrated at various places in the Río Grande de Nazca drainage to see if it is accurate and if the drainage was "moving in sync." The current relative chronology is aligned to illusory one-hundred-year epochs. We need a series of consistent radiocarbon dates for each of the sequential Nasca phases in each of the valleys and sectors in the valleys so that changes in settlement patterns in the drainage may be securely traced and interpreted and causality correctly attributed. A fine, temporally anchored relative chronology will let us see the "punctuated changes" (Pauketat 1998: 54) necessary for doing a theoretically informed archaeological ethnography.

At this point in Nasca archaeology anything suggested about Nasca sociopolitical organization is tentative. Nevertheless, I think we can see a change from a collective or corporate configuration of the Nasca 3 social formation toward a network-based structure in Nasca 5. This reorganization appears to have been affected by endogenous and exogenous factors. Excavation at civic-ceremonial centers and habitation sites may eventually reveal differentiated domestic loci with chiefly residences conceivably marked by larger patios for the feasting of the human labor they mobilized, perhaps including that

of potters, as well as structured and differentiated contexts and classes of material objects.

Crucial for understanding Nasca society in the Río Grande de Nazca drainage will be intensive study of various sites comprising the florescent and differentiated Nasca 1 settlement pattern. Did the entire drainage "become Nasca" at the same time following the EH-Paracas-Tajo occupation, and was there homogeneity or intra-drainage variation during the EH? For instance, I am unaware of reports of Paracas pottery south of the Nazca River proper, and Ingenio appears to have less and less varied Paracas pottery than Palpa (compare Silverman 1994a to Mejía Xesspe 1976). How did the pre-Nasca milieu affect subsequent cultural development in the drainage, particularly insofar as the rise of Cahuachi is concerned? Did migration from Ica occur (Silverman 1994a), and, if so, did it play a role in subsequent cultural and sociopolitical developments in the drainage?¹ Clearly, more fieldwork is needed.

The relationship between Nasca societies of the Río Grande de Nazca drainage and those of Ica must be completely reexamined in terms of the possible significance of variation in frequency of Nasca 1 and Nasca 2 pottery between the upper valley and lower valley in Ica. Also, the cause of stylistic variation in Nasca pottery of subsequent phases within Ica and between Ica and Nazca must be explained. Are these differences also reflected in other objects of the material culture inventory, and, if so, why? Was trophy head taking as prevalent in Ica as Nazca, and why or why not?

This brings up the issue of what is typically called ethnic identity. The geographical and temporal distribution of Nasca pottery over a large area of south coast Peru has long been considered coterminous with the society that produced it. But now archaeologists know that the presence of Nasca pottery in Pisco (Silverman 1997), in Acarí (Carmichael 1992; Valdez 1998), and in valleys farther north and south does not indicate that these valleys' inhabitants were Nasca. What interests me here is Moseley's work on corporate styles. Moseley (1992: 73) cogently argues that the "aesthetic canons, design motifs, and iconography" of the great ancient Peruvian art styles "were dictated by the political and religious organizations supporting the artisans, commissioning their work, and controlling its distribution." Moseley (1992: 74) proposes that corporate styles are distributed "as far as their supporting reciprocity systems reached." His insightful formulation prompts the critical question: were those who used Nasca pottery Nasca people, and, if so, how did they organize their world? Here theories of materiality

concerning cultural and social reproduction will be quite profitably applied.

Nasca Society in Larger Context

Archaeologists have tended to study Nasca from a regionally restricted perspective: the Ica Valley and individual valleys of the Río Grande de Nazca drainage. But we also must contextualize Nasca within the larger Central Andean social, economic, and political processes happening up and down the coast and in the highlands. Beyond recognized ceramic influences, what was the relationship between Nasca 1 and Chongos people, Nasca 3 and Carmen people, Nasca 7 and Estrella people? Only two small projects have explicitly sought to examine the Nasca-contemporary societies of Pisco within their own non-Nasca region so as to get an independent perspective on their cultural development and then make reference to Nasca (e.g., Peters 1997; Silverman 1997). To the south, Valdez (1998) is to be praised for attempting to unravel the relationship between Nasca and the EIP societies of the Acarí Valley. Now that they have been disaggregated from Nasca, it is important to study the EIP societies of Pisco and Acarí as social formations on the periphery of a great civilization (itself composed of participating societies) and as coherent core sociopolitical systems in their own right, particularly true for Pisco.

Contact among south coast peoples likely was terrestrial. For instance, Massey (1986: 331) proposes a route between Pinilla in the Ocucaje Basin and Cabildo in the middle Grande Valley; the Ica end of this hypothesized route is marked by a kilometer-long row of rocks and wood stakes. Contact between Ica and Pisco was surely undertaken from valley neck/upper valley to valley neck/upper valley where the intervalley distance is least. Contact between Nazca and Acarí was across the desert, probably taking advantage of the rich lomas vegetation between Las Trancas and Acarí.

Proulx's (1994) demonstration of strong Mochica influence from the north coast on Nasca 7 pottery and Joerg Haeberli's (work in progress) recognition of Nasca or Nasca-like cross-knit looped textiles on the far south coast require us to look yet farther up and down the coast so as to diachronically contextualize Nasca within an entire coastwide sphere of interaction, and we must consider the possibly status-enhancing role of long-distance exchange for particular Nasca people. Similarly, for many years a canonized relative chronology that saw highland Wari developing after Nasca culture had run its

entire evolutionary course (i.e., Nasca 1–8 followed by Nasca 9 = MH 1A: see, e.g., Menzel 1964; Rowe and Menzel 1967: chronological chart) has impeded consideration of coast-highland interaction (see Silverman 1988b). Macroregional processes involving areas north, south, and east of Ica-Nazca will have to be considered in future studies of Nasca. I therefore provide a highly schematic synthesis of the regional data relevant to Nasca and indicate some of the major problems that need to be solved in order to more fully contextualize Nasca.

EIP 1

Clearly, EIP 1 was a time of emergent sociopolitical complexity and intercultural contact on much of the south coast. There was a major Nasca 1 occupation at the neck of the Ica Valley. The large, architecturally complex hillside site of Cerro Cordero was located near the almost as large but simpler Cerro Yunque site (see Rowe 1963: 11; Massey 1986: 175–176). There was some kind of relationship between Nasca 1 people (of Ica, I assume) and Chongos people of Pisco, to judge from significant shared vessel forms (see Menzel 1971). It is important to indicate that the Chongos/EIP 1 occupation of Pisco was a discrete, non-Nasca florescent society with major settlements and civic architecture (Peters 1987–1988; Silverman 1997). It is possible that the EIP 1 burial grounds at the Paracas Peninsula pertained to this society. The relationship between the societies that produced the EIP 1–2 burials at the Paracas Necropolis and Nasca 1–2 pottery in Ica-Nazca remains a matter of debate (see, e.g., Peters 1991; Silverman 1991 *inter alia*).

EIP 2

Cordero Bajo and Cordero Alto were major sites in the upper Ica Valley during EIP 2. Other smaller and simpler terraced habitation sites are known. Massey (1992) argues that the upper Ica Valley was part of a Topará sphere of influence if not actually conquered by a Topará state. However, because the situation in Chincha and, especially, Pisco in EIP 2 is poorly known, it would be inadvisable to accept the existence of a Topará state at this time, let alone one that conquered Ica. In addition to more fieldwork in Pisco to establish the nature of its EIP 2/Campana society, resurvey of the upper Ica Valley, systematic survey of Ica's middle valley, and excavations are critical in order to determine the culture(s), cultural affiliation(s), and nature of Ica Valley society at this time. Similarly, the relationship between Nasca people and the

indigenous non-Nasca society in Acarí needs to be worked out. It appears that the EIP 2 occupation of Acarí was manifested by a local style called “Huarato” (Valdez 1998). Nasca 2 pottery entered Acarí at this time, though the vehicle for it is not understood.

EIP 3

Massey (1986) argues that the Ica Valley fell to a Nasca invasion from Nazca and that a major administrative center was established at Cerro Tortolita in the upper valley with several hierarchically organized levels of settlements led from Cerro Tortolita. I have previously criticized Massey’s argument because of the noncorrespondence of her description of Cerro Tortolita to what others have observed there (see Silverman 1993a: 321, 337).

In Acarí there is fine Nasca 3 pottery at several sites. However, Valdez (1998) and Carmichael (1992) maintain that Nasca was not the local style, but neither was it intrusive in Rowe’s (1963) sense of an invasion of conquest. Rather, Valdez (1998) suggests that individually motivated Acarí people went to Cahuachi on pilgrimage and there obtained exotic Nasca pottery, which they brought back to Acarí along with other esoteric knowledge. Other possible scenarios to account for early Nasca pottery in Acarí are down-the-line trade and direct trade—possibly with the Nasca residents of Las Trancas rather than those living farther north—without Acarí involvement in the Nasca religious cult.

There was some kind of relationship between Nasca people (presumably of Ica) and Carmen people of Pisco given Carmen’s polychromy, panpipes, and the occasional double-spout-and-bridge bottle and some iconography shared with Nasca. Despite the lacunae in knowledge about antecedent EIP 2 Campana society in Pisco, it probably would be an error to attribute to Nasca EIP 3 Carmen’s complexity (as this is manifested at Alto del Molino’s civic-ceremonial mounds and related habitation areas and at the Dos Palmas site; see Silverman 1997). There is a long history of occupation in the Pisco Valley, and it behooves us to first explore the endogenous factors in the rise and configuration of Carmen in addition to Pisco’s relationship to Chincha.

The polychrome Lima style replaced the arguably Toparoid Miramar style at more or less the same time or slightly after the Carmen emergence on the south coast (see Patterson 1966: table 1). Given the previous episodes of contact between the south coast and central coast (see Silverman 1996), it is not unreasonable to suggest that

Lima’s polychromy derived from the south. More attention should be paid to south coast/central coast interaction and the poorly investigated valleys in between (Chilca, Mala, Asia).

EIP 4

Archaeologists need to continue investigating the linkages within and among the many Nasca and non-Nasca societies. In the upper Ica Valley some Nasca 3 sites continued to be occupied in Nasca 4 times, a somewhat greater number of Nasca 3 sites were abandoned, and only one site was founded in Nasca 4 (Williams León and Pazos Rivera 1974). The abandoned Nasca 3 sites include hamlets, villages of varying size, habitation sites with encapsulated civic-ceremonial functions, and a segregated elite district. There appears to be little civic-ceremonial architecture in Ica in Nasca 4 times, though there were few ceremonial sites before Nasca 3 either. Whether changes in Ica were provoked by changes in the Río Grande de Nazca drainage (i.e., the collapse of Cahuachi) remains to be determined, especially now that Ica’s subjugation to Nazca has been questioned.

Carmen society of the Pisco Valley appears to have been unaffected by the demise of Cahuachi if Carmen’s cross-dating to Nasca 3–4 is correct in relative and absolute time (see Menzel 1971). This continuity would be especially significant if the Estrella style developed continuously from Carmen.

Rowe (1963) argued that Nasca 3 sites in the Acarí Valley were abandoned contemporaneously with the decline of Cahuachi and that the two events were causally related and attributable to the rapid fall of the alleged short-lived Nasca 3 state that had conquered Acarí. However, based on Acarí’s indigenous pottery style and architecture, Carmichael (1992) and Valdez (1998) vigorously argue that Acarí was independent of Nasca. Nasca 4 pottery is extremely scarce in Acarí (Valdez 1998: 119) in comparison to its bona fide presence at certain sites in Nasca 3. Little is known about Acarí in EIP 4 in comparison to its florescent settlement pattern in EIP 3. We need to examine whether the demise of Cahuachi might or might not have affected non-Nasca societies in the Acarí Valley.

There also was some interaction between Nasca people and highlanders. Schreiber (1992: 139, 227) reports rare examples of Nasca, “especially Nasca phase 4,” potsherds in the Carhuarazo Valley. This material is not unprecedented, since Schreiber (1992: 215, fig. 7.2) illustrates Kancha Phase incised bowls with “traces of red, yellow

and white resin paint within the design band” and having “important similarities [to] Paracas pottery of Ica.”

Lidio Valdez (personal communication, 1999) reports that a Peruvian archaeologist has found some one hundred Nasca 4 and Nasca 6 sherds in her excavations at Viscapalca, at the headwaters of the Pampas River in Ayacucho. This is a tremendously important find because Viscapalca is immediately above the headwaters of the Ica River. On a map the connection between uppermost Ica and the Pampas headwaters appears quite direct, with only a few kilometers above 4,000 meters separating Ica from a tributary that flows directly into the Pampas River.

EIP 5

The florescent situation in the Río Grande de Nazca drainage does not characterize the valleys to the north and south. Nasca 5 pottery is scarce in Ica, and no Nasca 5 and 6 civic-ceremonial architecture is reported there. The nature of EIP 5 society in Acarí is unknown. The nature of EIP 5 society in Pisco also is unknown, unless the Estrella style spans this epoch.

Lima Interlocking influenced Nasca 5 and 6 pottery (e.g., de Lavalley 1986: 165, top right; Eisleb 1977: plate IV). If and how it jumped over Cañete, Chíncha, and Pisco remains to be investigated.² I am unaware of actual Lima or Nasca pots in a context of the other.

EIP 6–7

Nasca 6 pottery and sites are extremely rare in Ica (Menzel 1971: 66, 124; Rowe 1963: 11), but this situation changed in Nasca 7, when there were sites even in previously unoccupied desert land (Menzel 1971: 86–92). There is Nasca 6 pottery in Pisco, probably from Ica and suggesting contact with that valley. But Estrella sites dating to EIP 6 are not well known. In Acarí EIP 6 is a time of new, although still apparently limited, settlement following the previous abandonment of sites. Clearly, effort must be made to understand EIP 6 society in all these valleys.

Nasca 7 was the time of the greatest geographical distribution and influence of the Nasca ceramic style. The Nasca 7 style influenced the Estrella style of Pisco and Chíncha, and actual Nasca 7 pottery is found in Chíncha (Menzel 1971: 126–128). Nasca 7 sherds also were recovered by Kroeber (1937: plates LXX-3, 4, LXXIII-4, LXXVII-2) at the large Cerro del Oro site in the lower Cañete Valley. In the preface to his 1937 monograph Kroeber wrote, “Cañete is an important valley, by no means deficient in imposing ruins, but has been very largely overlooked by

archaeologists.” The situation is largely unchanged more than sixty years later. Thus, Kroeber’s Nasca 7 sherds and a panpipe fragment in a “Middle Cañete” occupation of the great Cerro del Oro site are still without local context. At this point it is impossible to say if the Nasca 7 sherds arrived down the line, passing first through Chíncha and Pisco, or by some direct contact of which we have no other record. Cañete must be investigated through a large project.

The relationship between Nazca and Acarí was reestablished or renegotiated in EIP 7, and there is evidence in Acarí of a vigorous society with various sites reported from the shore to inland (Lothrop and Mahler 1957; Valdez 1989, 1990). Urton (1990: 194) suggests that the close relationship between Nazca and Acarí, documented in ethnohistoric sources and concerning the late prehispanic period, may have begun at this time. The fine work being done by CIPS must continue in order to elucidate all of Acarí prehistory.

Nasca 7 people appear to have been in active contact with foreign societies beyond the south coast. Knobloch (1983) identified specific Nasca 7 features on Huarpa pottery of Ayacucho, and Nasca 7 pottery also received or adopted ceramic traits from Huarpa (Paulsen 1983; Knobloch 1983). The Affendämon, with its sinuous body and long curled tail (Seler 1923: fig. 254), which appears suddenly in Nasca 7, has traits both highly characteristic of Wari pottery (it was transformed into the Nasca 9/Chakipampa Humped Animal in the highlands and returned to the coast as a supernatural feline, according to Menzel 1964: 29) and of the Mochica Moon Animal (Proulx 1989), itself derived from Recuay (see Bruhns 1976). There is still much to explain in terms of Nasca-Wari interaction.

Even more striking is the influence of the late Mochica pottery style on Nasca 7 pottery in terms of entire major iconographic themes, manners of portrayal, and vessel categories (Proulx 1994). It is important to note that no reciprocal Nasca influence is observable on Mochica pottery, in contrast to the Nasca-Huarpa situation, and, to the best of my knowledge, Nasca objects have not been found on the north coast or vice versa. The influence of the Mochica style on Nasca 7 pottery is strong enough to suggest that Nasca potters saw Mochica pots up close and saw them for quite some time. No direct terrestrial evidence of contact between the two peoples is known. Were the Mochica themselves traveling to Nasca Land (Ica? Río Grande de Nazca drainage?) or its periphery in Pisco, where Nasca 7 pottery is also known to occur? By virtue of the distances involved, I assume that Mochica (and Lima) contact with Nasca people was by

sea and that Mochica contact with Nasca involved the former's displacement south, rather than vice versa, because there is no evidence of Nasca seafaring, and Carmichael's (1991) littoral survey confirms the inland agricultural orientation of the Nasca. It is important to note that Haberland (1958; see Proulx 1994: 93) indicates that the Mochica objects reported to be from guano deposits on the Chincha Islands (see Kubler 1948) actually came from Macabí Island, offshore and halfway between the Chicama and Moche Valleys. Contact between the Mochica and Nasca would not necessarily have required the establishment of a settlement, much to the detriment of later archaeologists. Clearly, more investigation of the Mochica-Nasca connection is needed.

Shady (1981, 1982, 1988; see also Stumer 1958) has emphasized the intensification of interregional contact throughout the Central Andes at the end of the Early Intermediate Period. As summarized above, Nasca 7 society participated in this process. The documented inter-societal exchange of materials and intangibles must have provided the opportunity for further status enhancement by individuals or groups situated to control it. Further study of Nasca 7 society in Ica and the Río Grande de Nazca drainage is urgently needed.

EIP 8

Nasca 8/Loro sites appear to have been distributed along the length of the Ica River. Strong (1957: table 1) reported Nasca 8/Loro pottery at Chacararo Alto, Oyujaya I, and Oyujaya II in the lower valley. These sites are described as adobe structures, mounds, and cemeteries. Pezzia (1968: 203) identified Nasca 8/Loro potsherds at PV62-59 in the upper Ica Valley. Williams León and Pazos Rivera (1974) found a large (4.50 hectares) single component Nasca 8/Loro site (28L-11J04) in the upper Ica Valley that was composed of habitation, a civic-ceremonial area, and extensive cemeteries.

Of particular interest is the similarity between Ubbelohde-Doering's (1958: 82–84, fig. 13) Nasca 8/Loro/Morro burial at Cahuachi and the Wari mummy bundle remains at elite residential Wari sites and cemeteries in the lower Ica Valley that are reported by Cook (1992). Ubbelohde-Doering's tomb at Cahuachi was rectangular and covered with a fine barbacoa. The walls of the tomb were hung with textiles, and two huarango posts were upright in the tomb, alongside the seat of the mummy bundle. This seat was wrapped in beautiful colored cloth and was made out of many layers of vegetal material tied together with black strips of cloth and wound around in a sort of spiral technique, like a basket. Ubbelohde-

Doering indicates that the head of the mummy was missing when he located the burial. Cook (1992: 357) observed that the "deceased is usually seated on one or more coils of worked cloth stuffed with raw cotton, wrapped in a bale or bundle, and topped with a false head and face mask." The Nasca 8 data from Ica are fascinating but incomplete. They merit systematic investigation in the field.

There was a major Nasca 8/Loro occupation in the Acarí Valley.³ Late Nasca, Nasca 8/Loro, Middle Horizon, and later ceramic materials were recovered at La Oroya cemetery (Salguero Jara 1989). The so-called late Nasca cemetery at Tambo Viejo (Kent and Kowta 1994; Shumate 1989) contained Nasca 8/Loro and Middle Horizon materials. There also was Nasca 8/Loro material at Gentilar (see Kent and Kowta 1994: 114). Of particular interest in Acarí is the frequent occurrence of a Nasca 8/Loro effigy jar with an elliptical profile (see Kent and Kowta 1994: fig. 16, right). The form is said to be unique to that valley, although the style and iconography clearly link it to Nasca 8/Loro in the southern tributaries of the Río Grande de Nazca drainage. The relationship between Nasca 8/Loro people in Acarí and the Nazca drainage must be further studied.

The Challenge

Archaeologists have created a Nasca archaeological culture as we create all archaeological cultures. These analytical constructs are then treated as real societies and, worse, as monolithic, normative whole societies. Our pattern dependency leads to a typical "fallacy of reifying a property of a group of social actors into an entity" (Varela and Harré 1996: 314). But we need to recognize the labile flow of structure and fluidity of positioning in human societies.

Clearly, Nasca can no longer be thought of as "*the* EIP culture of the south coast of Peru" nor in isolation from the rest of the Central Andes. Archaeologists need to work locally and regionally and think macroregionally so as to consider interacting endogenous and exogenous dynamics in cultural evolution and social and political practice. The current era of Nasca settlement pattern surveys and isolated excavations needs to be complemented by extensive excavation and attention to the other fascinating EIP societies of the south coast. Such a coordinated research program will provide basic data and new theoretical insights of interest to all scholars who problematize their research with reference and relevance to problems of complex society and social com-

plexity worldwide. Then archaeologists shall be able to write ethnographies of once living Andean societies.

Notes

1. This problem is being investigated by Hendrik van Gijsegem.

2. I note here Kroeber's (1944: n. 24) statement that according to his recollection he thought Tello had found Nazca B sherds at the Malena site in Asia. See also Kroeber's statement

on page 349 in "Cultural Stratifications in Peru," *American Anthropologist* 28 (1926): 331–351. I know nothing about this other than what Kroeber offers.

3. I had, at one time, considered the possibility that the Nasca 8/Loro style developed in Acarí and was introduced to Las Trancas, whence it spread. However, there appears to be more variety in the Nasca 8/Loro pottery from the Room of the Posts (e.g., Silverman 1993a: figs. 13.18–13.23, 13.25, 13.26, 13.28, 13.29, 13.31–13.35) and Huaca del Loro (Paulsen 1983; Strong 1957; personal observation) than is illustrated for Acarí, so I am not convinced—although the possibility must still be entertained.

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